# PERCEPTIONS OF ASSURANCE SERVICES PERFORMED BY CERTIFIED PUBLIC ACCOUNTANTS: HIGHER EDUCATION ASSESSMENT APPLICATIONS

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The overall purpose of this study was to examine how Certified Public Accountants (CPAs) perceive the potential use of assurance services to assess quality in accounting education programs. Survey questionnaires were mailed to a random sample of 250 CPAs in the north central Texas area. The questionnaire was designed to obtain demographic information and information relating to the respondents' perceptions of quality assessment of accounting education programs.

An analysis of the results of this study suggest the following: CPAs consider (1) certain established criteria, such as SAT scores and faculty-to-student ratios, as effective measures for assessing quality attributes in accounting education programs and (2) traditional measures currently used for quality assessment in accounting education programs as only moderately effective by CPAs. CPAs are apparently seeking increased involvement with accounting education quality assessment and formulation of educational standards. They view the potential application of assurance services to accounting education quality as a way to offer a wider range of services to the public. CPAs perceive assurance services as a type of quality assessment that can be used to complement, but not replace, some of the more effective traditional methods, and as a way of enhancing the quality assessment process for accounting education.

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# CHAPTER 1

# INTRODUCTION

## OVERVIEW

Quality, as an indicator of intrinsic value or worth, is sometimes difficult to measure. In some cases, the meaning of quality is precise; in other cases, perceptions of quality may vary greatly. For example, the term quality of life is broad and has different connotations to different individuals. Quality assessment may be performed by only one individual who is also the ultimate user of the object being assessed. In many cases, however, the ultimate users of quality assessment information are different from those who perform the assessment. Quality assessment is important to higher education because it provides relevant information that is useful to a wide range of individuals and groups. It affects policy formulation and decisions made by groups directly involved with institutions of higher education, such as college presidents or coordinating boards. External stakeholders, such as prospective students and employers, are also concerned with the quality assessment of higher education.

How is the quality of higher education institutions assessed? One common technique used extensively by prospective students and their families is to review one or more of the numerous college guides and surveys available. Information in these sources is typically provided through use of a ranking format. However, the true quality of an institution is sometimes distorted due to inaccurate or misleading information used in compiling the rankings or other attributes (Rothkopf, 1995).

A major problem with the information in the guides or handbooks is that data provided directly by the reporting institutions are not externally verified by independent outside sources. As Cheney (1992), formerly of the National Endowment for the Humanities, stated, "The guidebooks offer a wealth of information, except when it comes to the single thing most important to know when choosing a school: the quality of undergraduate education" (p. 31).

Another source of quality assessment in higher education is the system of accreditation. Various accreditation entities examine the programs, departments, and entire higher education institutions or systems to assess the degree of quality. For example, the American Association of Collegiate Schools of Business (AACSB) is the accrediting agency for certain business and accounting programs. At the college or university level, entire higher education institutions or systems are accredited by groups such as the Southern Association of Colleges and Schools (SACS). The accreditation process is an important source of quality assessment, but not all programs within a given college are subject to accreditation. For these programs, quality must be assessed through alternate processes.

Many organizations have traditionally used the services of independent certified public accountants (CPAs) to perform quality assessment relating to financial matters. Profit and nonprofit entities, including higher education institutions, routinely issue financial statements that report the results of their operations and information relating to their cash flows for a particular time period, as well as their financial condition as of a specific point in time. If the financial information is reported to users outside the

organization (e.g., stockholders or taxpayers), it is usually audited by CPAs. In cases where CPAs conduct financial audits of their client organizations, the CPAs must be independent of the client organizations that hire them. In addition to standards relating to independence, CPAs must adhere to high standards of professional competence, ethics, and continuing education.

The role of CPAs in auditing the financial information of organizations is firmly entrenched in today's society. However, while financial audits are probably the most well-known service performed by CPAs for their clients (in addition to tax services), they comprise only one type of a wide array of services performed by CPAs. Financial audits are a subset of a more comprehensive array of services performed by CPAs known as attest engagements. An attest engagement is one in which "a practitioner is engaged to issue, or does issue a written communication that expresses a conclusion about the reliability of a written assertion that is the responsibility of another party" (American Institute of Certified Public Accountants [AICPA], 1998a, AT § 100.01).

In 1993 the American Institute of Certified Public Accountants formed the Special Committee on Assurance Services which created a new type of service that could be offered by CPAs. Assurance services were defined by the committee as "independent professional services that improve the quality of information, or its context, to decision makers" (AICPA, 1998b, p. 1). This more recent type of service further extended the boundaries of reporting for CPAs. Financial audits and attest engagements are now subsets of an even larger set of information services offered by CPAs. Figure 1 illustrates the relationships between financial audits, attest engagements, and assurance services.

Colleges and universities are among the entities that engage the services of CPAs to perform services relating to the financial aspects of quality assessment. Is it feasible to use the professional expertise and judgment of independent CPAs to assess quality in

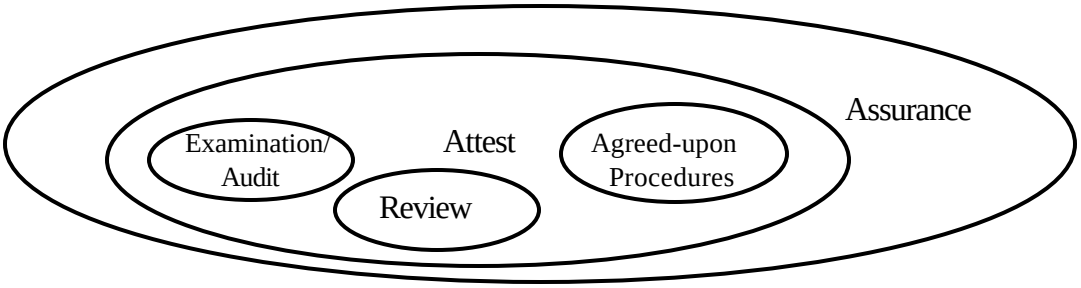


Figure 1. Information reporting services offered by CPAs (Source: AICPA, 1998b, p. 1)

higher education that extends beyond financial information? The emerging area of assurance services offered by CPAs could be used to develop a new framework for quality assessment in higher education. The theoretical model of this study examines the possibility of adding value to information used in quality assessment outcome measures in terms of assurance services. The potential for value added could be in the form of the increased reliability and independence possible through assurance services. CPAs could focus assurance services on outcome measurements, including, but not limited to, financial data.

## Statement of the Problem

The problem of this study was be to examine the perceived value of assurance services performed by CPAs in connection with quality assessment in higher education accounting programs.

## Purposes of the Study

The purposes of the study were as follows:

1. To develop a theoretical model for measuring perceptions of the value of

assurance services performed by CPAs relating to quality assessment in higher education accounting programs.

2. To classify CPAs according to major categories within the accounting profession.

3. To understand CPAs' level of familiarity with services commonly performed within the accounting profession.

4. To determine the degree to which CPAs regard commonly used measurement variables to be valid indicators of quality in accounting education programs.

5. To explore how CPAs perceive the effectiveness of certain currently used methods of accounting education quality assessment.

6. To examine perceptions of CPAs regarding the potential use of assurance services in accounting education quality assessment.

7. To compare the perceptions of CPAs in public accounting positions to the perceptions of CPAs in non-public accounting positions with respect to the potential use of assurance services in accounting education quality assessment.

## Research Questions

The following research questions are raised in order to accomplish the purposes of this study:

1. What are the major categories and relative size of each category that comprise the accounting profession?

2. To what extent are CPAs familiar with commonly performed services within the accounting profession?

3. To what degree do CPAs consider commonly used measurement variables to be valid indicators of quality in accounting education programs?

4. How do CPAs perceive the effectiveness of certain currently used methods of accounting education quality assessment?

5. How do CPAs perceive the potential use of assurance services in accounting education quality assessment?

6. Are the perceptions of CPAs in public accounting positions different from the perceptions of CPAs in non-public accounting positions with respect to the potential use of assurance services in accounting education quality assessment?

## Significance of the Study

The theoretical model developed of this study was based on the potential use of assurance services performed by CPAs for improving the information reporting processes for accounting education quality assessment. The theoretical model was presented to CPAs as one group of decision makers who use information relating to quality assessment in accounting education. Perceptions of the role of CPAs in providing information could be useful in determining the future direction of accounting education quality assessment. If decision makers perceive assurance services as adding little or no value to the quality of information provided for higher education quality assessment, CPAs could use these results to target assurance services to markets other than higher education quality assessment. If, however, the results of the study indicate a perceived value added from assurance services provided by CPAs, the implication might be that current methods of higher education quality assessment could be modified to incorporate assurance services.

## Definition of Terms and Variables

Key concepts and variables to be used in this study are defined as follows:

American Institute of Certified Public Accountants (AICPA): the professional organization of practicing CPAs in the United States. Membership is voluntary, and the responsibilities of this organization include standard setting, quality control, and certification and continuing education for CPAs (Smith & Skousen, 1990).

Assessment, higher education: the process of determining the value of any component of higher education, such as a system, institution, or program.

Assertion: any declaration or set of related declarations taken as a whole by a party responsible for it (AICPA, 1998b).

Assurance services: independent professional services that improve the quality of information, or its context, for decision makers (AICPA, 1998b).

Attest: providing of assurance as to the fairness and dependability of information (Whittington, Pany, Meigs, & Meigs, 1992).

Attest engagements: one of three types of engagements as defined by Statements of Standards for Attestation Engagements No. 1: examinations, reviews, and performance of agreed-upon procedures.

Auditing Standards Board (ASB): a senior technical committee of the AICPA that is responsible for issuing pronouncements dealing with technical auditing and attestation questions (Carmichael & Willingham, 1989).

Financial statement audit: a type of attestation engagement relating to an examination of an entity's financial statements performed by CPAs (Whittington, et al., 1992).

Input variables: variables that initially affect the higher education process, such as acceptance rates, admission criteria, and diversity of the student body.

Level 1 quality attributes: attributes of quality in higher education that are identifiable, measurable, and are subject to a high degree of consensus among stakeholders or users of higher education information. Procedures are assumed to exist for collecting, analyzing, summarizing, and verifying data relating to Level 1 attributes.

Level 2 quality attributes: theoretical characteristics of higher education quality that are present but are not clearly defined.

Outcome variables: variables that measure the attribute relating to the quality of accounting graduates, such as job placement, career advancement, and life-long learning.

Measurement variables: Input, process, and outcome variables that measure one of the quality attributes of accounting education programs.

Process variables: variables that measure the quality attributes of teaching, research, and service in an accounting program. The number and types of faculty publications and faculty-to-student ratios are examples of process variables.

Quality in higher education: any attribute which indicates conformity with a generally accepted standard or set of standards.

Quality assessment: measurement of quality attributes in terms of inputs, processes, or outcomes.

Reliability (qualitative): Reliability of accounting information as defined by the Financial Accounting Standards Board (1980): "The reliability of a measure rests on the faithfulness with which it represents what it purports to represent, coupled with an assurance for the user, which comes through verification, that it has that representational quality" (p. 1037).

Reliability (statistical): "in classical test theory, the amount of measurement error in the scores yielded by a test" (Gall, Borg, & Gall, 1996, p. 768).

Statements on Standards for Attestation Engagements (SSAEs): authoritative

pronouncements issued by the ASB that provide guidance to CPAs for attesting to information other than financial statements, such as financial forecasts (Whittington et al., 1992).

## Preliminary Qualitative Study

During the fall of 1996, a preliminary study was conducted by this researcher in order to examine the perceptions of using the services of CPAs to assess quality in higher education. Through use of a qualitative educational research design, the study was conducted through a series of structured interviews with higher education administrators, faculty, and practicing CPAs. Results of this preliminary study suggest that a perceived benefit could be attained through the extended involvement of CPAs in the quality assessment process in higher education. Detailed excerpts from the preliminary qualitative study are included in Appendix A.

## Delimitations of the Proposed Study

The scope of the study was restricted to obtaining data through survey questionnaires from CPAs who are members of the American Institute of Certified Public Accountants (AICPA) in the north central Texas area surrounding Dallas.

## Limitations of the Proposed Study

This study focused on the perceived value to users of quality assessment in higher education of the assurance services performed by CPAs. The actual value added of assurance services cannot be measured directly from the results of this study. The study was limited to exploring how CPAs perceive the concept of using assurance services to assess quality in higher education accounting programs.

# CHAPTER 2

# REVIEW OF THE LITERATURE

## Historical Overview of Quality Assessment in Education

Issues relating to quality in education have been explored since ancient times. Plato observed the importance of quality in education to society:

> Then let us not leave the meaning of education ambiguous or ill-defined . . . . Neither must we cast a slight upon education, which is the first and fairest thing that the best of men can ever have, and which, though liable to take a wrong direction, is capable of reformation. And this work of reformation is the great business of every man while he lives. (as cited in Hutchins, 1952, p.713)

Aristotle cited reading and writing, gymnastics, music, and drawing as the four "customary branches of education". Referring to the constitution of Lacedaemonia, he viewed the educational system as one indication of the democratic structure of their society:

> In the first place the youth receive a democratic education. For the sons of the poor are brought up with the sons of the rich, who are educated in such a manner as to make it possible for the sons of the poor to be educated like them. (as cited in Hutchins, 1952, p. 494)

The influence of the philosophies of Plato and Aristotle with respect to the quality of education is evident in some of the educational systems of the 20th century. Plato's views on reformation suggest a need for assessment of quality in education. Concepts such as a core curriculum and open enrollment embody some of Aristotle's philosophies on educational quality.

## Attributes of Quality

Mayhew, Ford, and Hubbard (1990) observed the dilemma associated with attempts at definitions of quality: "While quality as a concept shares certain abstract dimensions whenever it is discussed, it lends itself to so many different perspectives that meaningful dialogue is impossible unless the participants agree on a common approach" (p. 25). The specific meaning of quality varies by the nature of an organization or product, according to Ansari, Bell, Klammer, and Lawrence (1997). Quality in education is difficult to define and could be expressed in terms of general literacy, job skills, thinking ability, communication skills, or other attributes. Factors such as student access to education, new technology, and the caliber of faculty and performance affect quality in higher education, although they are sometimes difficult to measure. Higher education quality is important, not only because it is integral to America's future, but also because it is a chief initiative of national and state government (Palmer, 1998). Quality dimensions may vary according to the type of institution. For example, Elliot found as follows:

> Clearly Texas has some schools that are recognized nationwide as quality institutions according to traditional measures of faculty, research dollars and publications, but there are other ways to determine quality. Different schools meet different needs. Some institutions are preparing students for regional needs, some for more specialized needs, and some . . . have unique roles in the state. (as cited in Palmer, 1998, p. 1)

Garvin (1988) outlined five approaches to defining quality:

(a) an approach which involves the concept of transcendent quality, based on an innate excellence derived from a close relationship between the producer and the product;

(b) a manufacturing-based approach, based on conformance to requirements;

(c) a product-based approach, which views quality as a precise and measurable variable. Under this definition, differences in quality relate to differences in quantity of a particular attribute;

(d) a value-based approach, which considers the actual cost of a good or service relevant to quality; and,

(e) a user-based approach, which is grounded in the preferences of consumers. All of Garvin's approaches have been applied to educational settings. For example, if students' performance on nationally standardized tests is perceived as a measure of the relative quality of an educational institution, then a product-based approach to quality is being followed (Mayhew, et al., 1990).

Astin (1985) used a "talent-development" concept of educational quality, which focuses on the impact that institutions have on their students and faculty: "Its basic premise is that true excellence lies in the institution's ability to affect its students and faculty favorably, to enhance their intellectual and scholarly development, and to make a positive difference in their lives" (pp. 60-61). On the other hand, Mayhew et al. (1990) stressed basic techniques that emphasize reading and writing, numerical calculations, and closely evaluated practice in developing and using concepts. These considerations led them to develop a narrower definition of institutional quality that focuses on undergraduate education: "Quality undergraduate education consists of preparing learners through the use of words, numbers, and abstract concepts to understand, cope with, and positively influence the environment in which they find themselves" (p. 29).

Institutional diversity is an important attribute of quality in higher education. Birnbaum (1983) presented arguments for diversity, grouping these arguments into three categories. First, diversity can be justified on institutional grounds, which relate to such educational matters as curriculum development and student needs. Second, societal arguments are based on higher education's role in fulfilling political, social, and economic functions in addition to its stated educational purposes. The third category relates diversity to systematic needs: factors affecting the higher education system's ability to remain stable in the face of environmental changes.

The contributions of Deming (1986) in the field of quality control are well known in industry, but he also wrote of quality in higher education, emphasizing the importance of research:

> How do you define a good teacher? I offer comment only in respect to higher education. The first requisite for a good teacher is that he have something to teach. His aim should give inspiration and direction to students for further study. To do this, a teacher must possess knowledge of the subject. The only operational definition of knowledge requisite for teaching is research. Research need not be earthshaking. It may only be a new derivation of knowledge or principles already established. Publication of original research in reputable journals is an index of achievement. This is an imperfect measure, but none better has been found. (p. 173)

The following generalizations by Mayhew, Ford, and Hubbard ( 1990) summarize the basic concepts relating to attributes of quality in education:

1. Quality in education should not based on static norms of performance.
2. Quality must be defined with enough specificity so that its attributes are at least suggested.
3. Quality improvement should be linked with assessment and feedback.

The aforementioned concepts and theories of quality are not intended to be all-inclusive. They are presented to serve as a foundation for studying quality assessment in higher education.

Wilger (1997) suggested the following as characteristics of quality in education:

1. Technical knowledge;
2. Literacy;
3. Lifelong learning skills;
4. Ability to make informed judgments and decisions
5. Ability to function in a global community;
6. A range of characteristics needed for success in the workplace, such as motivation and persistence, creativity, ease with diversity, ability to work with others, and high ethical standards;
7. Demonstrated ability to apply these skills to complex problems in real-world settings.

Wilger also observed that characteristics of education quality in the literature tend to be expressed in the language of external stakeholders, especially employers of graduates.

## Models of Quality Assessment

Issues of quality should not be confused with issues of quality assessment. The manner in which quality is assessed contains a qualitative dimension separate from the attributes being measured. The conceptual difficulties relating to "quality assessment"

can be just as perplexing and elusive as those relating to “quality” issues. As Terenzini (1989) noted:

> One of the most significant and imposing obstacles to the advancement of the assessment agenda at the national level is the absence of any consensus on precisely what ‘assessment’ means. . . . Lack of clarity about exactly what this term means on a campus constitutes a significant threat to the success of any assessment effort. (p. 327)

In addressing the problems associated with quality assessment, Terenzini recommended posing three questions: (a) "What is the *purpose* of the assessment?" (b) "What is to be the *level* of assessment?" and, (c) "*What* is to be assessed?" (pp. 327-328). Ewell (1984) has addressed Terenzini’s third question by suggesting a taxonomy which contains four basic categories of outcomes: (a) knowledge outcomes, (b) skills outcomes, (c) attitudes and values outcomes, and (d) behavioral outcomes.

The term “quality assurance” is often used synonymously “quality assessment”. Massey ( 1999) conducted research on the use of quality assurance in Scandanavia, where the concept of the academic audit has been used for the systematic review of institutional and departmental work. His research in Sweden and Denmark suggets that audits can be conducted on a low cost basis and can stress improvement as well as accountability.

Deming (1986), who developed a 14-point model for management that can be useful in a quality assessment context for higher education, wrote the following:

1. Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs.
2. Adopt the new philosophy. we are in a new economic age. western management must awaken to the challenge, must learn their responsibilities,

and take on leadership for change.

3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag. instead, minimize total cost. move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.
5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.
6. Institute training on the job.
7. Institute leadership. the aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.
8. Drive out fear, so that everyone may work effectively for the company.
9. Break down barriers between departments. people in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.
10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.

11. Eliminate work standards (quotas) on the factory floor.
    A. Substitute leadership.
    B. Eliminate management by objective. eliminate management by numbers, numerical goals. substitute leadership.
12. Remove barriers that rob the hourly worker of his right to pride in workmanship
    A. The responsibility of supervisors must be changed from sheer numbers to quality.
    B. Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, inter alia, abolishment of the annual or merit rating and of management by objective.
13. Institute a vigorous program of education and self-improvement.
14. Put everybody in the company to work to accomplish the transformation. the transformation is everybody's job. (pp. 23-24)

While Deming's 14-point model has been widely applied in industrial settings, it has important implications for higher education institutions as well. For example, some researchers have suggested that the mission of a higher education institution should relate to the "constancy of purpose" philosophy (as defined in Deming's first point in his 14-point model) in terms of producing a better-educated student. A higher education institution which produces a responsibly educated graduate, delivers quality service, and produces quality research should be able to benefit from outcomes such as funding,

increased student applications, and an enhanced reputation (Cornesky et al., 1990).

Other researchers have also suggested the use of concepts for quality improvement normally associated with profit-oriented businesses for higher education settings. Cornesky, McCool, Byrnes, and Weber (1991) applied the concepts of Total Quality Management (TQM) and Total Quality Improvement (TQI) to higher education, using the quality theories of Crosby (1984), Deming (1986), Imai (1986), and Juran (1988). The resulting model developed by Cornesky et al. (1991) established five conditions for establishing quality at a higher education institution: (a) education and administrative commitment, (b) education commitment of faculty and staff, (c) establishment of trust, (d) establishment of pride in workmanship, and (e) a change in the institutional culture. With these conditions present, a higher education institution may be able to achieve high-quality outcomes such as team accountability, emphasis on responsibility to contribute, and constructive competition.

Quality assessment in higher education has been studied from the perspective of the college student. Using factor analysis, Wright (1996) identified eight key factors specifically related to quality in higher education from the perspective of the student: (a) diversity of the educational experience, (b) ease of access and use of facilities, (c) personalized interaction, (d) student quality, (e) educational process, (f) faculty quality, (g) computing facilities, and (h) teaching experience. Wright suggested that knowledge of these factors may enable colleges and universities to enhance quality in those areas of importance to target student groups. Evidence indicates that quality assessment in higher education is increasing in prominence in the United States: Over 11 states have now

officially addressed assessment as a matter of policy or statute. However, research also indicates that, although a majority of higher education administrators favor assessment, almost as many fear the use of assessment by eternal authorities and are also concerned about how it may narrow curricula and homogenize instruction. A surprising gap also exists between opinion and action: over 50% of college administrators support higher education assessment, but only 15% report implementing any type of assessment procedures (Ewell, 1987)

## CPAs and Quality Assessment

The role of CPAs traditionally has been viewed in terms of providing primarily financial information. Financial reporting is a broad area of accounting that encompasses providing information about organizations for decision-making purposes. Kieso and Weygandt (1998) defined financial accounting as "the process that culminates in the preparation of financial reports on the enterprise as a whole for use by parties both internal to the enterprise. Users of these financial reports include investors, creditors, managers, unions, and government agencies" (p 3). CPAs in public accounting perform financial audits to assess the quality of information contained in the annual reports of the client companies they examine. CPAs within an organization are also involved in financial reporting to the extent that they compile the information to be included in the annual reports that are the subject of audits. The set of rules and guidelines governing the area of financial reporting is collectively known as generally accepted accounting principles (GAAP). GAAP can originate from either authoritative accounting rule-making bodies (such as the Securities Exchange Commission or the Financial Accounting

Standards Board) or through acceptance from universal application (Kieso & Weygandt, 1998). Today, the Financial Accounting Standards Board (FASB) is extremely influential in the development of GAAP.

For several years, application of GAAP to specific accounting areas has been guided by a conceptual framework developed by the FASB. The conceptual framework is described as "a coherent system of interrelated objectives and fundamentals that can lead to consistent standards and that prescribes the nature, function, and limits of financial accounting and financial statements" (Financial Accounting Standards Board [FASB], 1980, p. 1062). The conceptual framework is manifested in six official pronouncements promulgated by the FASB, known as Statements of Financial Accounting Concepts. The FASB has used the more general conceptual framework to issue Statements on Financial Accounting Standards, which address specific areas of financial accounting. The accounting profession also looks to the conceptual framework for general guidance in application of GAAP to reporting criteria.

The conceptual framework helps accountants deal with fundamental issues and problems associated with financial reporting. For example, Statement of Financial Accounting Concepts No. 5 establishes guidelines for revenue recognition[1] and measurement. Although some exceptions are allowable, the revenue cannot be recognized unless it meets two specific criteria: (a) the revenue must be realized or realizable; and (b) it must be earned (FASB, 1984). However, the guidelines set for the

[1] The FASB (1984) defined the term recognition as "the process of formally recording or incorporating an item into the financial statements of an entity as an asset, liability revenue, expense or the like" (p. 1097).

conceptual framework have been criticized on the grounds that too much emphasis is placed on narrowly defined recognition and measurement criteria (Wallman, 1996). Commenting on the shortcomings of current financial reporting practices, Wallman suggested the following:

> I believe it is time to refine our perspective on financial reporting. We need, in particular, to move away from a model that primarily relies on black and white recognition in the financial statements. We need to move towards a model where financial statements and related disclosures are viewed more as different layers of information – just as a finely textured color picture can provide more information than a black and white representation. . . . Such a framework – where the different layers of information could reflect, in essence, different levels of satisfaction of the traditional recognition criteria concepts (e.g., relevance, reliability, measurability), or could reflect entirely different concepts – will be useful in progressing beyond the current recognition versus non-recognition debates. (p. 144)

This "colorized" approach to financial reporting proposed by Wallman (1996) could be applied to quality assessment in many areas, including higher education. Currently, the level of involvement by CPAs in higher education quality assessment is limited to reporting primarily financial information. Using Wallman's model as a foundation, CPAs could extend the boundaries of quality assessment in higher education beyond the traditional areas of reporting financial information and issue independent reports relating

If CPAs were to expand the range of their services to include reporting on nonfinancial aspects of institutional quality, issues relating to extent of verification, scope of services, and auditor independence would likely be raised. Wallman (1996) recognized the inherent difficulty in verification or attestation of some of the information under the proposed model. An example was used based on management's estimates of the value of a brand name. While it might be difficult for auditors to attest to the value of

assets such as brand names per se, they should be able to attest to the procedures used by management in deriving the resulting estimates (pp. 146-147).

Earlier research suggested concepts similar to those included in Wallman's (1996) model. Reid (1984) concluded that financial statements for not-for-profit organizations measure the effects of past economic transactions only in terms of monetary units. A Statement of Organizational Performance, containing performance measures in terms of efforts and accomplishments about the entity, should be included with the traditional financial statements. Such a statement would contain numerous nonmonetary indicators of efficiency and effectiveness (pp. 37, 42). Most colleges and universities are not-for-profit entities. Therefore, Reid's study could be useful in developing a model of quality assessment in higher education that utilizes non-monetary performance measures.

Using the services of CPAs to assess nonfinancial quality measures is not a new idea. Previts (1985) observed that " at the start of the [20th] century, many professional leaders suggested that the ultimate domain of the CPA was limited only by the practice of law on one side and engineering on the other" (p. 4). The role of the CPA as a consultant can be traced back several decades. A 1957 pamphlet by the Wellington Committee of the AICPA included a descriptive meaning for management services and an eight-part listing of service areas: general management, finance, production, sales, office management, purchasing, traffic and transportation, and personnel (Previts, 1985). By the 1960s it was becoming apparent that the scope of services offered by CPAs could extend beyond tax and auditing. As consulting services became more prevalent, there was mounting concern regarding the extent to which consulting services posed a conflict of interest in

areas such as independence and the extent to which CPAs are involved in the decision-making process. Addressing the issue relating to the decision-making process, Moss wrote the following:

This confusion can be dispelled by dissecting the decision-making into three parts:

1. Determining the problem.
2. Discovering alternative courses of action.
3. Selecting the course of action which will lead to the profit objective of the firm.

The independent CPA can and should aid management in the first two phases of the decision process. . . . however, when the action step, the act of choosing is performed . . . such is the responsibility of the manager. (as cited in Previts, 1985, pp. 94-95)

Previts (1985) suggested the following set of elements for consulting independence for CPAs:

1. There is a clear need not to overexpand services and thereby create public expectations which cannot be uniformly met by all CPAs in public practice.
2. There is a view that the type of consulting – information as compared with administrative – may affect concerns about independence.
3. There is a need to recognize that independence in fact and in appearance will continue to be a concern and must be continually a subject for instruction and case analysis.

4. There is a basis within the process of peer review for a "test of review" related to consulting to be set forth.
5. There is also a presumption that competence will be carefully developed and maintained and that educational programs will be appropriately identified and supported to afford a steady stream of highly-trained entry-level persons. (p. 117)

Accounting firms have been providing management consulting for years and will probably continue to offer these services in the future. CPAs have the potential to offer management consulting services to all types of entities, including institutions of higher education. Management consulting engagements, however, typically focus on financial attributes. Since quality assessment in higher education involves many attributes which are not financial in nature, it is necessary to explore the range of non-financial services offered by CPAs.

The operational audit has traditionally been a source for examining the non-financial qualities of an entity. Flesher and Stewart (1982) defined an operational audit and discuss its potential benefits as follows:

> An operational audit is a non-financial audit of all aspects of an operation. An operational audit is a thorough examination with the objective of appraising managerial organization, performance, and techniques. . . . The operational audit is the broadest type of audit and examines all functions of the business.

Depending on the scope of the engagement, an operational audit may result in some or all of the following benefits:

1. Identification of previously undefined organization objectives, policies, goals, and procedures.

2. Identification of criteria for measuring the achievement of organization *objectives and assessing management performance.*
3. An independent, objective evaluation of specified operations (the assessment of performance).
4. Determination of whether the organization is in compliance with objectives, policies, directives, and procedures.
5. Determination of the effectiveness and efficiency of management control systems.
6. Determination of the reliability and usefulness of various management reports.
7. Identification of problem areas and (perhaps) the underlying causes.
8. Identification of opportunities for potential profit improvement, revenue enhancement, and cost reduction or containment within the organization.
9. Identification of alternative courses of action in numerous areas. (pp. 23-24)

The use of operational audits is not limited to profit-oriented businesses: The General Accounting Office (GAO) has been conducting operational audits on various federal governmental units for years. The extensive use of operational auditing , in which nonfinancial attributes are examined, suggests the potential for using CPAs to assess quality in higher education.

## Taxonomy of CPA Services

CPAs offer an extensive array of services to the public, ranging from tax services to financial audits to management consulting. The type of service performed depends on the information needs of intended users. Financial audits are performed to provide

information to users external to the organization, primarily investors and creditors. Operational audits are primarily used internally within an organization to assist management in improving effectiveness and efficiency.

In the area of external reporting (i.e., reporting in which the intended users of the information are not a part of the organization), financial statement audits are probably the most widely known type of service performed by CPAs. However, financial audits comprise only one type of external reporting service included in a wider range of services known as attest engagements. Carmichael and Willingham (1989) interpreted the different categories of attest engagements performed by CPAs as follows:

1. Examinations are attest engagements designed to provide a high level assurance on whether an assertion is presented in conformity with certain criteria against which it is measured. A financial statement audit is a type of examination that relates exclusively to financial statements.

2. Reviews are engagements designed to provide only a moderate level of assurance. The procedures performed in assessing the reliability of the assertions are less extensive than those used in examinations.

3. Agreed-upon Procedures are engagements designed to meet the particular needs of individuals or groups who have agreed-upon procedures to be applied or criteria to be used. The use of the information in the report by the CPA is restricted to the specific user group requesting this type of engagement.

Financial statement audits of higher education institutions have been routinely performed by CPAs in the past. By their very nature, audits are limited to the

examination of financial data. However, it appears that attest engagements could also be applied to other outcome measures relating to quality assessment in higher education, in addition to financial information. Since CPAs are independent third parties, such examinations could provide a higher degree of reliability with respect to assertions made by administrators within higher education institutions. Figure 2, based on the model by Whittington et al. (1992) illustrates the attest function.

During the early 1990s, attestation services became a subset of a broader range of services offered by CPAs known as assurance services. The American Institute of Certified Public Accountants (1998b) explained the scope of assurance services as follows:

> Assurance services can improve the reliability or relevance of information for decision makers. The range of information on which CPAs can provide information is potentially vast. Information might be financial or nonfinancial, historical or prospective, comprise data or relate to systems, or be internal or external to the user. . . . Assurance services encompass audit and other attestation services, but include other, nonstandard services as well. (p. 1)

With the introduction of assurance services, the traditional role of CPAs will be redefined to include a wider range of services. As an example, Solomon (1997) cited the

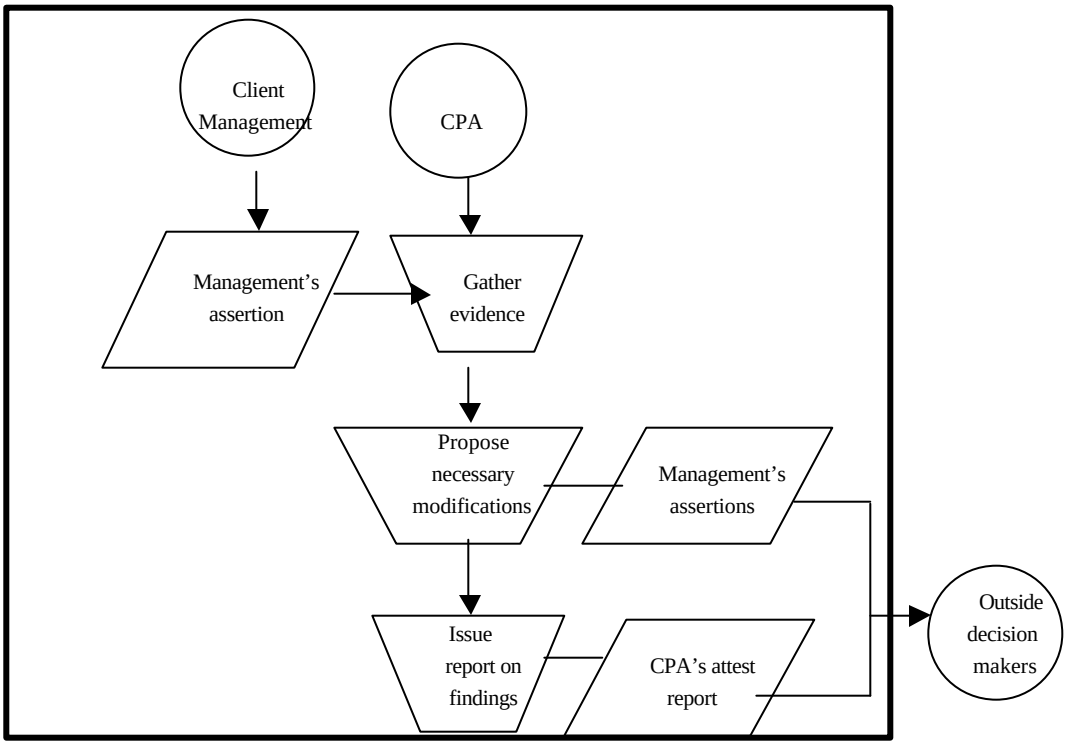


Figure 2. The attest function

the use of CPAs to provide assurance services in tabulating the results of the state lottery drawings. Although similar to consulting services in some respects, assurance services have a different objective. Assurance services focus on improving information, whereas consulting services usually involve providing advice or installing information systems. To take advantage of assurance service opportunities, CPAs will need to broaden their perspective beyond financial reporting. The needs of decision makers will determine the range of services CPAs will provide in the future (Elliott & Pallias, 1997).

## Quality Assessment in Higher Education: Currently Used Methods

Accreditation plays an important role in assessing quality in higher education. Within larger universities, individual colleges and programs of the institution may be accredited by different agencies. External user groups, such as prospective students and

employers, can use accreditation information as a basis for decision making. However, the accreditation process may not be able to assess quality in all areas of a higher education. For example, accreditation agencies may not exist for all programs or areas within an institution.

College handbooks offer external users another source of information about the quality of higher education institutions. The information contained in some of the handbooks is compiled from data provided directly from the institutions. For example, Lovejoy's College Guide provides summarized information about colleges and universities as well as sections on curricula for specific careers and accreditation (Straughn, & Straughn, 1997). Cass & Birnbaum's Guide to American Colleges describes and explains information provided in the catalog descriptions of institutions. Based on factors such as the average test scores of recent freshmen classes, an index is also used to rate the relative admission selectivity of most of the institutions included in the guide. The editors commented that "this book is not a measure of the overall quality of colleges, which are institutions far too complex to be ranked by simple statistical data" (Cass-Liepmann, 1996, p. ix).

U.S. News & World Reports annually ranks American colleges and universities. Two broad categories are used: national and regional institutions. About 92 % of the data come from the institutions through questionnaires. Quality rankings are based on the following weighted factors: academic reputation, retention, faculty resources, student selectivity, financial resources, graduation rate performance, and alumni giving rate. According to the authors, data are checked with other information sources whenever

possible (Graham & Morse, 1998).

With the exception of some of the methods used in the accreditation process, the other methods of assessing quality rely on data provided directly from the institutions themselves. Figure 3 illustrates how information on quality in higher education is reported under some of the existing techniques.

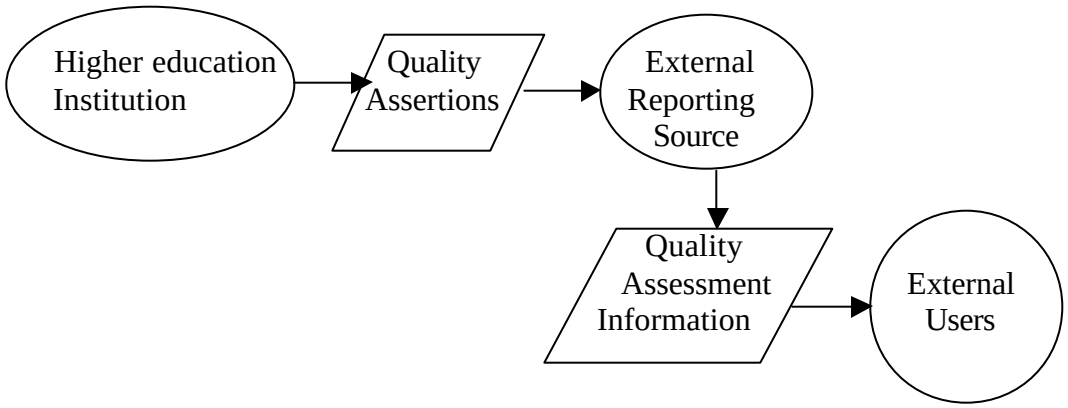


Figure 3. Quality assessment: Methods other than assurance services.

## Development of a Theoretical Model

Using the research from earlier studies as a base, a theoretical model was developed for this study to explore the potential role of CPAs in assessing quality in higher education. The starting point for the theoretical model of this study was based on the assumption that quality in higher education is the aggregate of all characteristics or attributes that exemplify value of higher education. These attributes emanate through a consensus among stakeholders or users of the higher education system. Users of higher education quality-assessment information are diverse, and their reporting needs vary. Furthermore, the reporting information on quality in higher education may relate to any number of reporting entities. For example, information on educational quality could

range from an entire system of higher education (e.g., the overall quality of public 4-year colleges and universities within the state of Texas) to comparisons between individual colleges and universities to quality assessment of specific programs within individual institutions. When developing a theoretical framework or model on quality assessment in higher education, the scope of the study must necessarily be limited. One such limitation relates to the scope of the reporting entities: The reporting entities of this theoretical model will be defined as accounting programs at 4-year institutions. Accounting was selected as the type of program for analysis because the subjects used in the study were CPAs, who are assumed to have some background in both assurance services and accounting programs.

In developing the theoretical model, additional scope limitations will be imposed to narrow the focus of quality assessment in higher education. Conceptually, the aggregate or total of all quality characteristics can be subdivided into two separate levels of quality characteristics. These levels, explained in the sections below, permit a method for focusing on certain aspects of quality.

Level 1 Higher Education Quality Attributes

Level 1 attributes will be defined as those attributes of quality in higher education that meet the following basic criteria:

1. Attributes within this level, or their effects, are identifiable.
2. A high degree of consensus exists among the stakeholders of higher education (e.g., students, employers, taxpayers) as to what constitutes quality for the attribute in question.
3. Attributes are subject to measurement. The data relating to the attribute within this level can be observed, collected, and quantified.

4. Appropriate procedures exist for summarizing and analyzing the data.
5. The data relating to the quality attribute can be verified.

Examples of level 1 attributes include measures of quality such as faculty performance, quality of applicants, and success of the graduates. The objective of the theoretical model is to examine the feasibility of using assurance services performed by CPAs to assess quality in higher education. Level 1 attributes will be used for the theoretical model primarily because of their ability to be measured. In addition, it is assumed that level one attributes are more accepted and have a wider degree of consensus among users of assessment information than the level 2 attributes discussed in the section below.

Level 2 Higher Education Quality Attributes

Level 2 higher education quality attributes are theoretical characteristics of quality that are present but are not clearly defined. The theoretical model of this proposed study assumes the overall quality of higher education can somehow be measured. If a theoretical overall value can be assessed for a particular institution, for example, the derived value represents the total quality of the institution. Another assumption of the theoretical model used of this study is that all level 1 higher education quality attributes can be conceptually delineated and measured. Level 2 quality attributes represent the portion of total quality that remains after all level one attributes have been taken into account. The amount of total quality that cannot be accounted for through level one attributes is assumed to relate to some other group of intrinsic characteristics of quality, which will be categorized as level 2 quality attributes for purposes of this theoretical model. Level 2 attributes are assumed to be measured only in the aggregate, due to their abstract nature. Level 2 attributes of quality in higher education could be compared to the current practice of recording goodwill in a business combination between two entities. When one business purchases another business for an amount in excess of its

underlying net assets, the incremental value is assumed to be attributable to an amount sometimes referred to as goodwill. Level 2 attributes of higher education attributes are analogous to goodwill, an amount of value that exists which cannot be attributed to specific items.

Selection and Measurement of Level One Quality Attributes

The quality assessment process in the theoretical model of this study began with the identification of certain key level 1 attributes that are commonly used indicators of quality in higher education accounting programs. The number of level 1 attributes that contribute to higher education quality attributes may be extremely large and potentially infinite. Therefore, only a few level 1 attributes were selected for the analysis for the theoretical model. Assuming that level 1 attributes are the focus of the model, level 1 attributes of quality can be further subdivided into three areas: (a) attributes relating to inputs affecting quality in higher education, (b) attributes relating to processes within higher education that affect its quality, and (c) attributes relating to outcomes of higher education that are indicative of quality. These three subdivisions, along with the five criteria for the level 1attributes previously discussed, guided the selection of quality attributes.

The next phase in the development of the theoretical model was to specify certain attributes associated with the input, process, and outcome aspects of higher education. The attributes selected were assumed to possess all criteria necessary for inclusion as a level one. Specifically, input, process, and outcome attributes of quality must be identifiable, generally accepted by stakeholders as an attribute of quality, measurable, subject to analysis, and verifiable. Once an attribute had been selected, a appropriate measurement variable was specified that was assumed to be an indicator of the quality attribute of interest. A number of widely accepted assessment measures were reviewed

for possible inclusion as variables for this study. Table 1 summarizes the level 1 input, process, and outcome attributes and the related measurement variables selected for inclusion in the proposed study to evaluate quality assessment in higher education.

As previously noted, the scope of quality attributes was limited for purposes of this study, and the level 1 attributes selected represent only a sampling of the domain of all possible level 1 attributes.

Table 1: Level 1 Quality Attributes and Related Measurement Variables

| Level 1 attribute subdivision | Specific quality attributes | Measurement variables |
|---|---|---|
| Quality attributes relating to inputs in higher education | Quality of admissions standards | 1. Minimum SAT scores<br>2. Average GPA of incoming students |
| Quality attributes relating to processes in higher education | Quality of faculty teaching<br>----------<br>Quality of faculty research<br><br>----------<br>Quality of faculty service | 1. Student & peer evaluations<br>2. Faculty –to- student ratios<br>----------<br>1. Number and types of publications<br>2. Number and types of research grants awarded<br>----------<br>1. Committee assignments<br>2. Participation in conferences, seminars, and workshops |
| Quality attributes relating to outcomes in higher education | Quality of graduates | 1. Admissions of graduates to graduate and professional programs<br>2. Salary and placement Information |

Measurement of Variables and Reporting Assessment Information

Once the measurement variables were selected, it was necessary to determine who was responsible for measuring and interpreting the data. Variables that are commonly

used as indicators of quality, such as faculty-to-student ratios, are currently measured, analyzed, and reported through only a few channels. Accreditation bodies have traditionally played a prominent role in assessing quality in higher education. However, accreditation may not in and of itself be an adequate indicator of quality. A proliferation in the number of accreditation agencies has resulted in a certain amount of confusion on the part of many users of higher education quality assessment information, especially among those who lack a thorough understanding of the complexities within higher education systems and the assessment process. Some users of assessment information perceive accreditation as an indicator of quality without investigating the underlying substance of the accreditation agency or accreditation process. Magazines, journals, handbooks, and other similar publications routinely measure quality in higher education. These popular media provide an accessible means for a diverse range of users to access higher education assessment information. Although this type of assessment is widely accepted, it tends to oversimplify the assessment process through the use of its ranking techniques. A lack of a uniform set of measurement standards represents another disadvantage of the use of the popular press as an assessment measure. Finally, information obtained through the methods cited often lack independence and objectivity. In some cases, even if the data are reported directly from the institutions to the publication with some type of third-party verification, there exists the possibility that the reporting institution will have some degree of flexibility in order to control perceptions of the reported information.

CPAs have been attesting to financial information for a number of years. Information presented in the form of financial statements must adhere to a uniform set of standards known as generally accepted accounting principles (GAAP). In determining whether a given entity's financial statements are in conformity with GAAP, CPAs must adhere to guidelines and procedures as set forth under generally accepted auditing standards (GAAS). The theoretical model of this study suggests a need for uniformity, consistency, and independence in higher education assessment. An underlying assumption of the model is that CPAs could contribute to the improvement of assessment in higher education. Building on traditional principles of independence and objectivity, CPAs could extend their current expertise to develop higher education assessment standards. In a manner similar to the current procedures in which CPAs apply GAAS to determine whether an entity's financial statements are in conformity with GAAP, the theoretical model of this study suggests that CPAs could use a uniform set of assessment standards to measure a set of generally accepted higher education quality attributes.

The level 1 characteristics previously mentioned are suggested as generally accepted higher education quality attributes. Assurance services performed by CPAs could be applied to higher education quality assessment. One purpose of this study was to examine how this proposed concept of using assurance services to assess quality in accounting education would be perceived by CPAs.

The operational aspects of how assurance services could be applied to assessing quality attributes in higher education accounting programs are shown in Figure 4. The

quality standards indicated in Figure 4 could be compared to generally accepted accounting principles (GAAP) within the context of financial reporting.

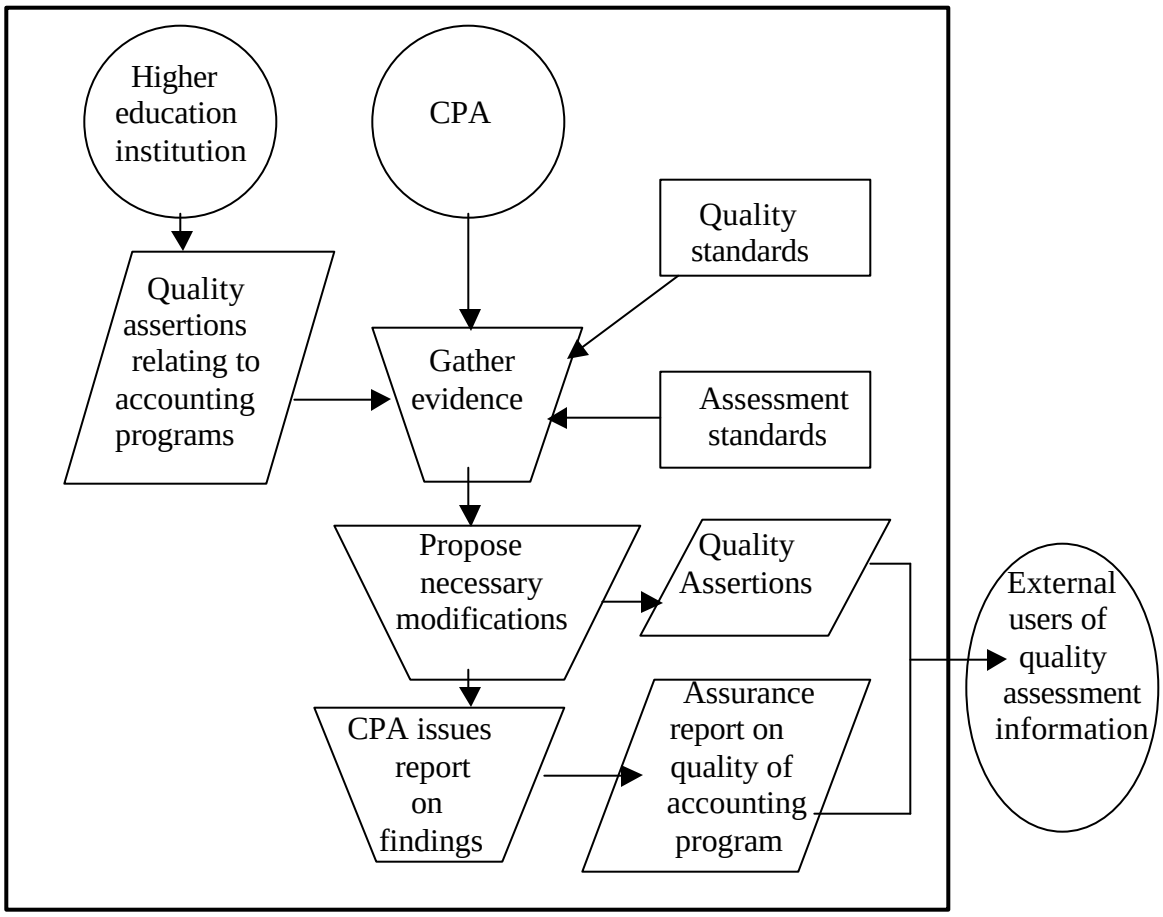


Figure 4. Operational overview: The use of assurance services in higher education quality assessment

The quality standards of higher education accounting programs could be developed through consensus among the users of assessment information relating to the appropriate attributes of quality. Assessment standards could provide guidelines to CPAs in providing assurance services relating to the assessment of quality standards. The assessment standards are analogous to the generally accepted auditing standards (GAAS)

used in conducting an audit of financial statements. An underlying assumption of the theoretical model is that CPAs could be engaged by higher education institutions to perform assurance services relating to the quality standards of their accounting programs. In performing this role, it is also assumed that value will be added to the assessment by introducing elements of independence, objectivity, and assessment expertise, which may not be present under existing assessment measures. However, the goal of the proposed study is not to establish quality standards or assessment standards. The objective of this study is to measure the perceptions of the concept of using assurance services to assess quality in accounting programs. Figure 5 illustrates the basic concepts underlying the theoretical model of this proposed study.

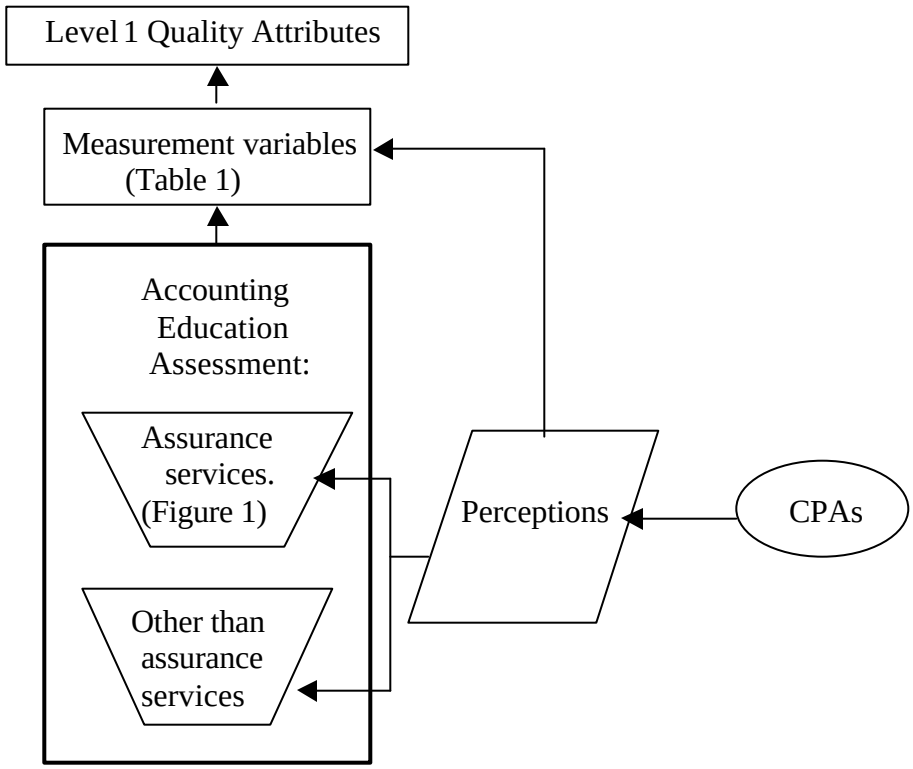


Figure 5. Theoretical model: Perceptions of assurance services in accounting education assessment

In summary, as assurance services become more prevalent, CPAs are beginning to

move beyond providing traditional financial accounting information. To date, higher education quality assessment has not been identified to any great extent as a potential market for assurance services. Studying the perceptions of the potential use of assurance services to assess quality in higher education would be useful from the perspective of the market for assurance services. Chapter 3 is a discussion of the procedures to be used for collecting data that will be analyzed to understand some of the demographics of CPAs. Certain variables are commonly used to measure quality attributes of accounting programs. Chapter 3 explains the methodology used for collecting and analyzing data on how CPAs perceive the validity of these variables. Chapter 3 will also compare the CPAs' perceptions of existing methods of quality assessment to their perceptions of the potential use of assurance services for assessment.

# CHAPTER 3

## PROCEDURES FOR COLLECTION AND ANALYSIS OF DATA

### Introduction

This study was designed to compile and analyze information relating to perceptions of the potential role of assurance services performed by CPAs in quality assessment of higher education accounting programs. Data relating to perceptions of quality assessment were collected through responses to a survey questionnaire mailed to CPAs. Perceptions of the potential use of assurance services in accounting education assessment was compared to perceptions of existing methods of accounting education assessment. This study was not designed to develop specific methods and procedures for implementing a new system of accounting education program assessment. The primary goal of the study was to analyze how CPAs view a proposed method of accounting education assessment that utilizes assurance services.

### Population of the Study

The target population of this study consisted of CPAs who are current members of the American Institute of Certified Public Accountants (AICPA) within north Texas. The target population was subdivided into two separate groups: the public accounting group and the non-public accounting group. The public accounting group consisted of CPAs with professional positions within public accounting firms. Public accountants offer their services to a wide variety of clients, from large publicly held corporations to individuals.

The size of the firm within the public accounting group also varies greatly, from sole proprietors to large international firms. Within the non-public accounting group, approximately 90% of the CPAs held management accounting positions in private industry, with the other 10% of CPAs employed in the areas of governmental accounting, not-for- profit accounting, or education. The categorization for this study was based on the accounting profession models of Ingram and Baldwin (1998), Pratt (1990), and the American Institute of Certified Public Accountants (2000). A detailed analysis of categories in the accounting profession based on the results of this study is included in Chapter 5.

## Survey Instrument

Due to the unique nature of the research, a survey instrument in the form of a questionnaire was designed and developed specifically for this study. The design of the survey was based on the theoretical model of this study and a review of the relevant literature. Qualitative research findings (Appendix A) also influenced the development of the questionnaire. The format for the questionnaire was based on guidelines of Gall, Borg, and Gall (1996) and Isaac and Michael (1981). The revised cover letter and the survey questionnaire used to collect data for this study appear in Appendix B.

The questionnaire was divided into five sections. Part 1 was used to collect basic demographic data from the respondents relating to their current accounting positions and their familiarity with various services typically performed by CPAs. In Part 2, information was gathered relating to the perceived importance and validity of some commonly used variables for measuring quality in higher education accounting

programs. Questions in this section were designed to analyze the respondents' perceived value of measurement attributes in terms of input variables, process variables and outcome variables, as defined in Chapter 2 of this study. Part 2 is structured around responses to the question, "Which attributes do CPAs view as important in assessing quality in higher education accounting programs?"

Part 3 focuses on the perceived effectiveness of several methods, such as rankings in popular publications and use of the accreditation process, currently used to assess quality in higher education accounting programs. Part 4 focuses on how CPAs view the potential use of assurance services to assess quality in accounting education programs. Nine statements relating to the potential role of assurance services performed by CPAs are indicated in this part of the questionnaire. The responding CPAs are asked to disclose on the survey the extent to which they agree or disagree with each of the statements. For example, the respondents are asked to express their opinions on whether or not assurance services could replace methods currently used to evaluate quality in accounting education programs. Parts 3 and 4 examine perceptions relating to the general question, "Which methods should be used to assess quality in higher education accounting programs ?" As an incentive for completing and returning the survey, respondents could obtain summary results of the study by completing the optional Part 5 of the questionnaire. If they chose to complete Part V, the respondents could request summary results of this study by completing the mailing information.

Item 1 in Part 1, which included one open-ended response, related to the current professional position of the respondent. Responses to item 1 were categorical and treated

as nominal scale data. Responses to items 2 through 37 were measured using a five-point Likert scale. Differences between each of the five points are not necessarily equal, which implies an ordinal scale of data measurement. Data analysis with ordinal data is not necessarily limited to calculation of descriptive statistics. According to Green, Tull and Albaum (1988), inferential statistical analysis may be appropriate when the underlying data are ordinal. Tests of significance (such as t-tests and correlations) can be performed in addition to descriptive statistics.

A panel of experts was consulted to evaluate the validity of the survey instrument. The panel consisted of professors from the following disciplines: education, accounting, information systems and statistics. Members of the panel independently evaluated the cover letter and questionnaire. Based on the recommendations of the panel, one item from Part 4 was eliminated due to its ambiguity and minor changes to items 16, 18 and 22 in Part 2 were made to clarify their meaning.

## Pilot Study

A copy of the cover letter and the survey instrument was filed with the University of North Texas Office of Research Services. Approval was obtained in advance from the Institutional Review Board of the university to conduct research involving human subjects (Appendix C contains copies of the documents). A convenience sample of 18 practicing CPAs in the Dallas-Fort Worth, Texas area was selected for the pilot study. The pilot study was comprised of CPAs from public accounting, private accounting and governmental accounting. One survey was hand delivered to the respondent and the remaining 17 surveys were mailed. The mailed surveys included stamped pre-addressed

envelopes for return of the completed survey. Eight of the eighteen surveys were returned, representing a 44.44% response rate. Due to the small number of responses, measures of reliability of the survey could not be measured directly. However, Light, Singer, and Willett (1990) assert that representativeness is more important than sample size. In this pilot study, the proportion of CPAs in public accounting and industry approximate the proportions cited by Ingram and Baldwin (1998) and Pratt (1990) in their categorization models. Therefore, the composition of the pilot study was assumed to be representative of larger populations of CPAs.

By using a questionnaire to gather the data for the pilot study, a lower degree of reliability associated with a smaller sample could be accepted.[2] Using general guidelines suggested by Hinkle, Wiersma, and Jurs (1994), a general analysis of data from the eight respondents suggested a high internal consistency among the 37 items in the questionnaire. The respondents did not indicate any problems relating to the clarity of the individual items or instructions. Based on a suggestion from one of the respondents, the cover letter was reduced in length. The panel of experts recommended changes to the cover letter and reviewed the survey questionnaire for reliability. Other than revisions to the cover letter, no additional changes were made to the survey questionnaire. All changes were filed with the Institutional Review Board at the University of North Texas.

[2] Gall, Borg, and Gall explain that "in practice, researchers tend to apply looser validity and reliability standards to questionnaires and interviews than to tests because the researchers typically are collecting information that is highly structured and likely to be valid (e.g., the respondents' years of schooling). Also, they are interested in the average response of the total group rather than the response of a single individual. A lower level of item reliability is acceptable when the data to be analyzed when the data are to be and reported at the group level than at the level of individual respondents." (p. 291)

## Selection of a Sample and Procedures for Collection of Data

The sampling unit was defined as a CPA residing in Texas who is a current member of the AICPA. A random sample of 1,000 CPAs within Texas was obtained from the AICPA, with names listed in ascending zip code order (AICPA member tape, 2000). A database was created from the computer files sent by the AICPA. Using preprinted mailing labels, questionnaires were mailed during the last week of September, 2000 to the first 250 names on the list. The first name on the list was used as a starting point for selection because both the names on the list and the names on the mailing labels were in postal zip code order, which facilitated mailing of the questionnaires. Given the homogeneity of the population, it was estimated that the 250 initial mailings would be a sufficient number of questionnaires to mail to yield an adequate response rate if follow-up requests were sent. Homogeneity exists when respondents are similar in background or characteristics. Rossi, Wright and Anderson (1983) observed that "in general, the greater the homogeneity, the smaller the return needed" (p. 9). CPAs as a profession tend to have similarities in areas such as education, licensing requirements, continuing education, nature of their work, and their code of professional ethics.

Each questionnaire was discreetly coded numerically to facilitate follow-up mailings. A personalized, hand signed cover letter and a return envelope with postage paid were included with the questionnaire. The mailing labels and the names in the database were arranged in nine-digit zip code order. Although this procedure facilitated mailing, it imposed a geographic limitation. 1,000 names were selected at random from the population of all AICPA members in Texas. However, out of the 1,000 randomly

selected names, only 250 names were used in the study and assigned on the basis of ascending zip code order. The geographical area of this survey includes three zip code regions (using the first three digits). The geographic area for these zip codes includes the metropolitan Dallas, and areas north extending to the border of Oklahoma, south approximately 120 miles, and extending east and west of Dallas approximately 60 miles in either direction.

Although a geographic limitation exists, it does not appear to impose severe restrictions for purposes of this study due to the homogeneity of the population and sample. Therefore, homogeneity for the population of CPAs will be assumed for purposes of this study, permitting a smaller sample size and a certain degree of generalizability of results, given the geographic limitations.

51 surveys were returned during October and November, 2000, representing a 20% response rate. Questionnaires were matched with names in the database, thereby permitting identification of nonrespondents for the purpose of a follow-up mailing. It is possible that some respondents may have perceived the coding as an impairment of confidentiality. The potential impact on the response rate of this assumption was not measured. However, the potential benefit of increasing the response rate through follow-up mailings appears to have outweighed any possible adverse effects arising from questions of confidentiality.

In order to analyze the potential impact of nonrespondents on the analysis and attempt to increase the overall response rate, a follow-up survey was sent out in late November, 2000. A copy of the cover letter used with the follow-up mailing is included

as Appendix D. The additional 52 questionnaires were received during December, 2000 and early January, 2001. A total of 11 questionnaires (5 from the initial mailing and 6 from the follow-up mailing) were discarded from the study due to incomplete or missing data[3]. Of the 92 usable questionnaires, 46 were obtained from the initial mailing and the remaining 46 were from the follow-up mailing, resulting in an overall response rate of 36.8% for the usable data.

Two telephone inquiries, each lasting approximately three to five minutes, were received in which the respondents asked for clarification on the relationship between assurance services and education. One of the respondents mailed in the questionnaire following a brief phone conversation. The other telephone respondent returned an e-mail response in lieu of the questionnaire. Due to the narrative form of the e-mail, no data could be used and the information was discarded.

## Research Design

The design of this study was primarily descriptive and exploratory in nature (Light, Singer, & Willett, 1990). Analytical measures that were secondary to the research objectives are included in the appendixes. In the first item of the questionnaire, each respondent was asked to provide information relating to their current positions as CPAs. Initially, the following mutually exclusive categories were used to summarize the employment related information: (1) partner in public accounting firm, (2) manager in public accounting firm, (3) other position in public accounting, (4) manager of human

[3] A questionnaire was considered complete only if all 37 items were completed by the respondent. Otherwise, the survey was not included as part of this study.

resources, (5) supervisor or manager of accounting staff, and (6) other. Respondents could use the sixth category to write-in their current positions or title if they felt none of the other five categories described the nature of their work.

To facilitate analysis, data within the six categories were combined to form two dichotomous categories: the public accounting group and the non-public accounting group. Within the non-public accounting group, approximately 90% of the CPAs were employed in private industry, while the other 10% worked for governmental agencies, not-for-profit organizations or educational institutions.

## Procedures for the Treatment of Data

Data from each of the 92 questionnaires were entered into the database and analyzed using SPSS 10.0 for Windows. An alpha level of .05 was used for all statistical tests in this study. In order to test for potential non-response bias, comparisons were made between the responses from the initial mailing to responses from the follow-up mailing. The questionnaires used in the follow-up mailing were identical to those used in the initial mailing. An independent samples t-test for the equality of means was performed on each of the 37 items in the questionnaires. The results of the t-test analysis indicated no significant differences between responses from the initial mailing and responses from the follow-up mailings. Detailed results from t-tests are included as Appendix E.

Based on the results of the t-tests for equality of means, the assumption can be made that respondents from the initial mailing answered the 37 questionnaire items in a manner closely related to the respondents in the follow-up mailings. Non-response bias is

apparently not a significant problem and the two groups were combined for analysis purposes.

## Summary

The phase of this study that identified the population, development of a survey questionnaire, use of a pilot study to test the validity and reliability of the survey instrument, sample selection, research design, and procedures for the treatment of data have been described. The usable data were collected from 92 respondents: 46 responses from the public accounting group, and 46 from the non-public accounting group. The responses were entered into a database and analyzed using SPSS 10.0 for Windows. Detailed analyses of the data are presented in Chapter 4.

# CHAPTER 4

# PRESENTATION AND ANALYSIS OF DATA

## Introduction

A sample of 92 CPAs was selected to measure specific demographic characteristics about the accounting profession in the north central area of Texas and examine their perceptions of the validity of a number of indicators currently used to measure accounting education program quality. The study was designed to interpret how CPAs perceive the effectiveness of several methods currently used to assess quality in accounting education programs. Another goal of this study was to examine how CPAs view the potential role of assurance services in quality assessment of accounting programs. A final goal of this study was to compare how two different groups perceived the proposed use of assurance services in assessing quality in accounting education programs. Respondents in the sample was divided into two comparison groups: CPAs in public accounting positions and CPAs in non-public accounting positions. The proposed use of assurance services to assess quality in accounting education programs was the foundation for the theoretical framework discussed in Chapter 2.

## Demographic Information

Part 1 of the survey questionnaire was used to collect demographic information about the respondents relating to the first two research questions of this study. Item 1 on the questionnaire was designed to gather data relating to the first research question in the

study: "What are the major categories and relative size of each category that comprise the accounting profession?" Items 2 through 7 in the survey questionnaire were related to the second research question: "To what extent are CPAs familiar with commonly performed services within the accounting profession?"

First Research Question: "What are the major categories and relative size of each category that comprise the accounting profession?"

In Item 1 of the questionnaire, respondents were asked to classify their current job status according to one of the following categories: public accounting (partner, manager or other position) manager of human resources, supervisor or manager of accounting staff, or other (an open-ended response). The human resources category was eliminated completely because none of the respondents indicated they were employed in this area. An initial review of item 1 responses revealed that most of the respondents work in either public accounting or management accounting, with a smaller number employed in governmental or not-for-profit positions. Table 2 compares the survey results of this study to the AICPA random sample of Texas CPAs and the accounting profession categorization model of Ingram and Baldwin (1998).

The Pratt (1990) model does not contain a percentage breakdown by category within the accounting profession and contains an separate category for Tax Accounting, but in other respects otherwise uses the same classification scheme as the other sources in Table 2. Use of the three categories in Table 2 provides a convenient method for classifying the accounting profession along functional lines. For analysis purposes, the governmental and not-for-profit accounting, consulting and law group was combined with the

management accounting group to form the non-public accounting group. There were two primary reasons for using a dichotomous categorization of the respondents. First, the six

Table 2: Demographics: Accounting Profession Categories

| Accounting Profession Category | Percentage in Each Category (by Source) | | |
|---|---|---|---|
| | From Survey Results of This Study (N = 92) | From AICPA Random Sample of Member CPAs in Texas (N = 943) | Ingram and Baldwin Model |
| Management Accounting | 59% | 53% | 60% |
| Public Accounting | 34% | 39% | 25% |
| Governmental and Not-for-profit Accounting, Consulting, and Law | 7% | 5% | 15% |
| Total | 100% | 100% | 100% |

respondents in the public accounting governmental and not-for-profit accounting, consulting and law category accounted for only 7% of the sample, a number too small for analysis purposes. Second, at the time of this study, assurance services were only being provided by CPAs in public accounting. However, CPAs in the management category and the governmental and not-for-profit accounting, consulting and law category do not currently provide assurance services. Formation of two distinct groups - one that provides assurance services and one that does not provide assurance services - permits comparisons relating to perceptions of the potential value of assurance services in

accounting program assessment. Table 3 summarizes the composition of the comparison groups used in this study.

First Research Question: Analysis of Results

Based on the survey results, the accounting profession in the North Central Texas area of the United States consists of approximately 35% of CPAs in public accounting positions and 65% of CPAs in non-public accounting positions. The sample percentages

Table 3: Composition of Sample by Accounting Profession Category

| Accounting Profession Category | Respondents (N = 92) | Percent of N |
|---|---|---|
| Public Accounting | 32 | 34.8 |
| Non-public Accounting | 60 | 65.2 |
| Totals | 92 | 100% |

of this study are fairly close to the categorical percentages in the AICPA sample and the Ingram and Baldwin model percentages. Several factors may explain the 10% difference between the sample percentages and the Ingram and Baldwin model percentages for the public accounting categories. Both the sample of this study and the AICPA sample consist only of CPAs, whereas the Ingram and Baldwin model includes both CPAs and accountants who are not CPAs. Although some non-CPAs are employed in public accounting at the lower levels of the firms, a large number are employed in management, governmental and not-for-profit accounting. The larger number of non-CPAs in the non-public accounting positions could partially explain the larger percentage in this category in the Ingram and Baldwin model. Another possible explanation for the difference may involve regional variations relating to the categories. The sample of this study was

limited to CPAs in the north Texas area that includes Dallas and the surrounding areas, whereas the Ingram and Baldwin model applies to the entire United States. Geographical variations may also account for some of the categorical variations between the sample of this study and the AICPA sample.

Taking into consideration the possible causes of variation among the categorical percentages for the three models, the percentages within the sample results appear to be consistent with other categorical models. Therefore, the two categories of respondent CPAs developed for this study may be considered appropriate for data analysis in other areas of this study.

Second Research Question: "To what extent are CPAs familiar with commonly performed services within the accounting profession?"

The second section of Part 1 of the survey questionnaire was designed to gather data relating to the respondents' level of familiarity with services commonly performed by CPAs. Six services typically performed by CPAs were selected for the questionnaire and included as items 2 through 7. The decision of what types of services to include on the survey instrument was based on a review of the research of the AICPA (1998b), Carmichael and Willingham (1989) and Whittington Whittington, Pany, W. B. Meigs, and R. F. Meigs (1992). The responses were measured using a five-point Likert scale, anchored with 1 as "not at all familiar" to 5 as "very familiar". Appendix F provides descriptive statistics compiled from survey results for items 2 through 7.

Second Research Question: Analysis of Results

A review of the demographic results in Appendix F indicates that the CPAs in this

study have a relatively high degree of familiarity with tax related services and financial auditing (with mean scores over 4 in all three categories). The CPAs rated their familiarity lower in the areas of financial planning, operational audits, and assurance services, with mean scores of 3.48, 3.27, and 3.29, respectively. The indicated results in the last three categories might appear to contradict an assumption that all CPAs are expected to be fairly familiar with all or most of the services offered within their own profession. The lower familiarity levels in the areas of financial planning and operational auditing may be due to the small number of respondents identifying these two areas as their current positions in item 1. Less than 5% of the respondents indicated financial planning as their current position and only 1% identified themselves as internal auditors[4]. The specialized nature of financial planning and operational auditing, combined with the small number of respondents in these areas, could explain the relatively low level of familiarity with these two areas. At least 95% of the respondents[5] are not directly involved with either financial planning or operational auditing and their familiarity with these types of services would be expected to be limited, as the survey data seem to indicate.

Assurance services were initially introduced in the mid-1990s and are a relatively new type of service offered by public accounting firms. As such, even CPAs in public accounting may not yet have a high degree of familiarity with this type of service. CPAs in local or regional smaller firms, who tend to specialize in the area of tax accounting and

[4] Flesher & Stewart (1982) explain the close relationship between internal auditing and operational auditing.
[5] Based on an analysis of item 1 in Part 1 of the survey results.

financial audits, are not likely to be have extensive familiarity with assurance services. Larger firms that tend to have more resources are beginning to offer assurance services. However, even CPAs in larger firms may not have accumulated extensive experience in this area due to the limited number of assurance engagements and the short period of time they have been offered. Anecdotal data, based on discussions with CPAs practicing in the area of auditing, suggests that CPAs are proceeding slowly into the area of assurance services because it is a relatively new area with few guidelines and standards. Therefore, the exposure to risk and potential liability associated with assurance service engagements is potentially greater than more traditional areas of accounting services.

To summarize, the respondents in this study appear to have a high degree of familiarity with tax services and financial audits. They appear to have only a limited knowledge of financial planning, operational audits or assurances services. Fewer respondents employed in the areas of financial planning and operational auditing may account for at least part of the lower overall familiarity with these types of services. Assurance services are a relatively new type of service offered by only a few of the larger public accounting firms, which probably accounts for some of the limited familiarity of this type of service.

Based on the results of this study, the lower degree of familiarity with assurance services could have implications in terms of the theoretical model. If CPAs only have an average degree of familiarity with this type of service, other individuals and groups would probably have an even lower degree of familiarity with assurance services. The results of this area of the study suggest that CPAs should gain more expertise and

experience with assurance services before these services can be applied to quality assessment in accounting education programs. At the same time, CPAs could inform individuals and groups who have an interest in accounting education (such as students, faculty and employers) about how assurance services could be used to assess quality in accounting education programs.

A separate but related issue involves how assurance services should be included in accounting programs. Some colleges and universities are beginning to incorporate assurance services as part of their curriculum, as part of auditing courses or as separate courses. For example, the University of Illinois at Urbana-Champaign offers a course titled "Assurance and Attestation" (Solomon, 1997, Fall). Familiarity and expertise relating to assurance services will be enhanced if CPAs are introduced to this area of accounting during their undergraduate or graduate education.

Third Research Question: "To what degree do CPAs consider commonly used measurement variables to be valid indicators of quality in accounting education programs?"

One approach in assessing quality of a higher education institution or a specific program, such as accounting, involves an evaluation of the institution or program on an aggregate basis. Another approach is to examine the quality of individual components of a higher education institution or program. The latter approach was chosen for this study because it permitted the accumulation of data on individual areas of quality, rather than on the overall quality of accounting programs. Conceptually this approach would permit more precise measurement of specific quality attributes.

The theoretical model of this study was used as a framework for exploring the elements of quality in accounting programs. The Level 1 quality attributes discussed in Chapter 2 of this study were a part of the theoretical model and were used in determining which variables to choose for analysis. As the theoretical model was being developed, three broad categories of quality attributes in accounting programs emerged: quality relating to inputs of accounting programs, quality relating to processes within accounting programs, quality outcomes of accounting programs variables and output variables. The three broad categories were used as basis for defining five specific quality attributes of accounting education programs:

1. Quality of accounting program admission standards relating to incoming students
2. Quality of teaching
3. Quality of faculty research
4. Quality of faculty service
5. Quality of accounting graduates

The attributes chosen were not intended to be an all inclusive taxonomy of quality attributes of accounting programs. Other quality attributes exist, but the indicated attributes are assumed to be an integral part of the assessment process for accounting and other programs. The attributes are also assumed to have relevance to assessments of individual colleges and universities, institutional systems, and assessments at the state and national level. It was also assumed that the respondents of this study (CPAs) would have a basic familiarity with the attributes and variables used measure them.

Part 2 of the survey questionnaire was designed to measure how CPAs perceive the validity of certain variables commonly used in accounting education program assessment. Using the five basic quality attributes, 16 variables were identified as possible methods for measuring the five quality attributes that are part of the theoretical model. For example, the variable "student evaluations of faculty" was chosen as one of several variables commonly used to measure the attribute "quality of teaching". The 16 methods selected are assumed to be representative of all measurement methods currently used to assess accounting program quality.[6] The CPAs participating in this study were asked to respond to the statement, "The indicated variable is a valid indicator of the quality attribute for accounting programs", using a five-point Likert scale anchored with 1 as "strongly disagree with the statement" to 5 as "strongly agree with the statement". The content of Part 2 of the survey questionnaire is included as part of Appendix B.

Third Research Question: Analysis of Results

The 16 variables used in the survey and the associated quality attributes are shown in Table 4. For each of the 16 items, the survey participants were asked to respond to the following statement "The indicated variable is a valid indicator of the quality attribute for accounting programs". The response choices were coded as follows:

1. Strongly disagree with the statement
2. Disagree with the statement
3. Undecided or not sure
4. Agree with the statement

[6] The survey discloses the fact that only a few of the many measurement variables

5. Strongly agree with the statement

Descriptive statistics were calculated for items 8 through 23 in Part 2 of the survey questionnaire and the results are summarized in Appendix G. Mean responses for the 16 items were rank ordered and the range, median and standard deviation for each of the items was calculated. The five quality attributes and their associated measurement variables are discussed separately.

Quality Attribute: Quality of Accounting Program Admission Standards Relating to Incoming Students

The mean response rate for Item 10, relating to the variable diversity, was 2.85.

Table 4: Quality Attributes and Measurement Variables Used in the Survey

| Quality attribute: | Variables used to measure quality attribute: | Mean response: |
|---|---|---|
| Quality of accounting program admission standards relating to incoming students | 8. Average SAT Scores | 3.63 |
| | 9. Acceptance Rate | 3.17 |
| | 10. Diversity | 2.85 |
| | 11. Average GPA | 3.99 |
| Quality of teaching | 12. Student evaluations of faculty | 3.85 |
| | 13. Peer evaluations of faculty | 3.82 |
| | 14. Faculty-to-Student Ratios | 4.07 |

| | | |
|---|---|---|
| Quality of faculty research | 15. Number of faculty publications | 3.16 |
| | 16. Types of faculty publications | 3.54 |
| | 17. Number of faculty research grants | 3.35 |
| | 18. Types of faculty research grants | 3.53 |
| Quality of faculty service | 19. Committee assignments | 3.23 |
| | 20. Participation in conferences, seminars, and workshops | 3.92 |
| Quality of accounting Graduates | 21. Admission rates into graduate and professional programs | 4.03 |
| | 22. Ranges of salary offerings | 3.86 |
| | 23. Placement information | 4.08 |

Although this was the lowest mean response, it is close to the scale of 3. A score of 3 indicates "undecided or not sure" on the five-point scale. The respondents appeared to be unsure as to whether or not the variable "diversity" is a valid indicator of the quality of incoming students.

To analyze the relationships between the variables, correlations were calculated using Spearman rank correlation coefficient[7] for each pair of variables within each of the five quality attribute categories. A correlation matrix indicating the relationships between the variables within each quality attribute category is shown in Appendix H. For the variable pair of diversity and acceptance rate, a coefficient of .301 was calculated, implying a low relationship between the two variables.

[7] Since the variables are on an ordinal measurement scale, the Spearman rank correlation coefficient is appropriate (Aczel, 1989). The Spearman rank correlation coefficient (Spearman's rho) was used on all correlation statistics of this study.

The following guidelines developed by Hinkle, Wiersma, and Jurs (1994) were used for interpreting correlation coefficients in this study:

| *Size of correlation coefficient* | *Interpretation* |
|---|---|
| .90 to 1.00 (-.90 to -1.00) | Very high positive (negative) correlation |
| .70 to .90 (-.70 to -.90) | High positive (negative) correlation |
| .50 to .70 (-.50 to -.70) | Moderate positive (negative) correlation |
| .30 to .50 (-.50 to -.70) | Low positive (negative) correlation |
| .00 to .30 (.00 to -.30) | Little if any correlation |

The respondents may believe that the diversity of incoming students has only a weak relationship to acceptance rate. Diversity related factors, such as ethnicity and gender, appear to have little influence on acceptance decisions and no causality between diversity and acceptance rates can be inferred. No significant correlation was observed between diversity and each of the other variables relating to the attribute of quality of incoming students. The respondents apparently did not see any relationship between diversity of incoming students and their average GPA. The correlation coefficients between average ACT scores, acceptance rate, and average GPA were significant but low ($\underline{r}_s$ = .230 to .464). It is assumed that if a mean response lies past the midpoint of two response scales, it will relate to the higher of the two scalar points. With a mean response of 3.99, the variable "average GPA" was ranked fourth out of the 16 variables relating to quality of incoming students. The ninth ranked variable "average SAT" yielded a mean response of 3.63. However, "acceptance rate" was only ranked 14 out 16 variables with a mean response of 3.17.

The respondents were asked to comment on the extent to which they felt each of the four variables was a valid indicator for measuring the quality of incoming students.

The respondents seem to be uncertain as to whether or not the variables relating to "acceptance rate" and "diversity" are valid indicators of the quality of an accounting program relating to admission standards for incoming students. "Acceptance rate" and "diversity" received median scores of three on the responses, providing further support that the respondents were unsure of the validity of these two variables. In contrast, the "average SAT scores" and "average GPA" measurement variables produced mean responses near the "agree" point on the response scale and median scores of 4.00. The correlation between these two variables was significant ($p<.01$) and had the highest correlation coefficient among the pairs in this attribute category. The results suggest that the respondents believe that average SAT scores and average GPA are valid measures of the quality of an accounting program relating admission standards of incoming students.

Paired samples t-tests were used to compare the mean responses between all combinations of pairs of items within each of the five quality attribute categories. The quality attribute category "Quality of accounting program admission standards relating to incoming students" contained four variables. The results indicated significant differences ($p<.05$) between the mean responses for all six paired combinations of items 8, 9, 10 and 11, implying that the respondents differentiated between each of the four variables used to measure the quality of incoming students. Appendix I contains summary statistical data of the t-test results for the attribute category "Quality of Accounting Program Admission Standards Relating to Incoming Students".

Quality Attribute: Quality of Teaching

The respondents were asked to express their opinions as to the validity of using "Faculty-to-student ratios", "student evaluations of faculty", and "peer evaluations of faculty" for measuring the quality of teaching. The three measurement variables received mean responses between 3.63 and 3.99, and median scores of 4.00[8], suggesting that the respondents agree that the variables are valid measures of the attribute quality of teaching. All correlation coefficients were significant ($p<.001$), implying that all three variables move in the same direction in terms of measuring the quality of teaching[9]. Taken together, the results suggest that the respondents agree that the variables of faculty-to-student ratios, student evaluations of faculty, and peer evaluations of faculty are valid measures of the quality of teaching in an accounting program.

Respondents were asked to indicate the extent to which they perceived each of the three variables (items 12, 13, and 14) as valid indicators for measuring the quality of teaching. The mean responses of the three combinations of paired items for the attribute "Quality of Teaching" were analyzed using paired samples t-tests. Comparisons between two pairs of variables (items 12 and 13, and items 12 and 14) yielded results that were not statistically significant ($p<.05$). Item 12 related to the variable "student evaluations of faculty" and item 13 related to the variable "peer evaluations of faculty". The respondents apparently did not distinguish between these two variables in terms of measuring the attribute "quality of teaching". Moreover, the comparison between the

[8] Descriptive statistics for responses to items 12, 13 and 14 are included in Appendix G.
[9] Correlation coefficients relating responses to items 12, 13 and 14 are included in Appendix H.

variables "student evaluations of faculty" and "faculty-to-student ratios" yielded results which were not statistically significant. The t-test for the latter pair also implies that the respondents perceived that the variables "student evaluations of faculty" and "faculty-to-student ratios" are effective measures of the attribute "quality of teaching" with approximately the same degree of effectiveness.

Statistical significance was observed from the t-test between item 13 ("peer evaluations of faculty") and item 14 ("faculty-to-student ratios"). The results suggest that the respondents view these two variables as separate measures for assessing the attribute "quality of teaching". While the respondents rated both variables as effective, the results of the t-test imply that the respondents perceive the variable "faculty-to-student ratios" as a somewhat more effective measurement variable than the variable "peer evaluations of faculty" in assessing the quality of teaching. Appendix J contains summary statistical data of the t-test results for the attribute category "Quality of Teaching".

Quality Attribute: Quality of Faculty Research

" Number of faculty publications", "types of faculty publications", "number of faculty research grants", and "types of faculty research grants" were indicated as possible measures of the quality of faculty research within an accounting program. "Types of faculty publications" and "types of faculty research grants" received mean responses of 3.54 and 3.53, respectively[10]. Although the mean responses for these variables were ranked fairly low, both variables produced median responses of 4.00. The resulting correlation coefficient between the two variables resulted in a moderate degree of

[10] Descriptive statistics for responses to items 15 through 18 are included in Appendix G.

correlation ($r_s = .616$, $p<.001$)[11]. The response results for these two variables suggest that the respondents agree that the variables are somewhat useful in measuring the quality of faculty research.

The respondents apparently were not sure as to whether the number of faculty publications or research grants provide valid indicators of the quality of faculty research. The variables "number of faculty research grants" and "number of faculty publications" received twelfth and fifteenth ranked mean responses, respectively. The median response for both variables was 3.00, indicating the respondents were undecided or not sure as to whether the number or research grants or the number of publications were valid indicators of the quality of faculty research. The two variables were highly correlated ($r_s = .690$, $p<.001$) implying that the two variables are related on the dimension of quantity. The respondents apparently view quantity alone as an inadequate measure of quality. The results seem to indicate that the types of research grants and publications may be more important in measuring the quality of faculty research than the quantity produced.

Paired samples t-tests were performed for all combinations of items for the measurement variables relating to the quality of faculty research. Statistical significance was observed on all pairs of variables with the exception of the pair of item 16 and item 18 ($p<.05$). The implication of the overall statistical significance in this area is that the respondents seem to feel more certain that some variables are better indicators of the quality of faculty research than others. For example, the variable "types of faculty

[11] Correlation coefficients relating responses to items 15 through 18 are included in Appendix H.

publications" (item 16) had mean response of 3.54, implying that the respondents perceive this variable as a valid indicator of faculty research. In contrast, the variable "number of faculty publications" ( item 15) yielded a mean response of only 3.16. The inference from the t-test for the pair of items and 16 is that the respondents perceive the type of faculty publication as a valid indicator of the quality of faculty research. However, they seem to be unsure as to whether the number of faculty publications can be used to measure the quality of faculty research.

No statistical significance was observed between the pair of items 16 and 18 ($p<.05$). However, the mean responses were 3.54 for item 16 ("types of faculty publications") and 3.53 for item 18 ("types of faculty research grants"). A possible explanation for the t-test results for this pair of variables is that the respondents may not have completely understood the context of the word "types" in relation to these two items. The wording may have been too vague for their interpretation and they may not have been able to distinguish between "faculty publications" and "faculty grants". However, based on the mean responses for items 16 and 18, the respondents appear to believe that both faculty publications and grants are valid indicators of the quality of faculty research. The two items could possibly have been combined into one item of a more general nature, such as "faculty publication and grant writing". Appendix K contains summary statistical data of the t-test results for the attribute category "Quality of Faculty Research".

Quality Attribute: Quality of Faculty Service

"Committee assignments" and "participation in conferences, seminars, and workshops" were the two variables relating to the quality of faculty service attribute. The variable "committee assignments" received the next to the last place in the mean ranking and had a median score of 3.00[12]. The other variable "participation in conferences, seminars, and workshops" was fifth in the mean response ranking and had a median score of 4.00. The correlation coefficient between the two variables was significant but low ($r_s = .690$, $p<.001$) indicating that there is only limited relationship between committee assignments and participation in conferences, seminars, and workshops[13]. The low mean and median responses for committee assignments seems to indicate either that the respondents do not know if this variable has an impact on quality of faculty service or they do not understand the nature of committee assignments. A median score and a high rank for the other variable suggests that the respondents perceive participation in conferences, seminars, and workshops as a valid technique for measuring quality of faculty service. The practicing CPAs who participated in this study might be expected to favor professional development as a measure of quality service. CPAs must regularly attend conferences, seminars, and workshop to meet their continuing education requirements and maintain quality in the accounting profession. Therefore, they may perceive that it is necessary for the academic community to use professional development as a way of upholding and measuring quality in education.

[12] Descriptive statistics for responses to items 19 and 20 are included in Appendix G.
[13] Correlation coefficients relating responses to items 19 and 20 are included in Appendix H.

A comparison using a paired samples t-test indicated a statistically significant difference ($p<.05$) between the mean responses for item 19 ("committee assignments") and item 20 ("participation in conferences, seminars, and workshops"). The mean response for item 19 was only 3.23, indicating that the respondents as group were undecided or not sure as to whether committee assignments were a valid indicator of the quality of service at a higher education institution. The mean response for item 20 was significantly higher at 3.92, which implies that the respondents view participation in conferences, seminars and workshops as a valid indicator of the quality of faculty service.

Therefore, the results of the t-tests imply that the respondents view the two variables differently in terms of their validity as measures of the quality of faculty service at a college or university. Appendix L contains summary statistical data of the t-test results for the attribute category "Quality of Faculty Service".

Quality Attribute: Quality of Accounting Graduates

The variable "placement information" on graduates had the highest mean response of all 16 variables at 4.08 and a median response of 4[14]. The results suggest that the respondents perceive placement information as a valid indicator of the attribute quality of accounting graduates. In many cases CPAs regularly evaluate the quality of work performed by new accounting graduates. This places them in a position of being able to gather anecdotal evidence relating the colleges and universities which tend to produce the best graduates. Placement information based on past experience with particular institutions could be useful in terms of recruiting and hiring. For example, if

[14] Descriptive statistics for responses to items 21 through 23 are included in Appendix G.

graduates from a particular accounting program prove to be good workers at a company, the company will be more likely to hire more graduates of the program in the future. The types of firms that hire accounting graduates may also be indicative of the quality of accounting graduates. The quality reputation of an accounting program will be enhanced if its graduates are regularly hired by top organizations. The top organizations are not necessarily the largest companies, but those with established reputations for excellence. If these top organizations routinely avoid hiring graduates from a particular school or if graduates are hired primarily in below average entry level positions, the quality of the graduates may be questionable. Placement information is readily available at little or no cost, CPAs can use it as another resource for effectively assessing the quality of accounting graduates.

The correlation between "placement information" and "ranges of salary offerings" is significant ($r_s = .563$, $p<.001$) and implies that job placement and salaries of graduates are moderately correlated[15]. The variable "ranges of salary offerings" had a mean response of 3.86, placing it sixth out of 16 in the mean response rankings and a median response of 4.00. The respondents seem to consider salary ranges of graduates as valid indicators of the quality of accounting graduates. CPAs apparently believe that the value of accounting programs is reflected at least partially in the salaries of its graduates. Based on the correlation between salary offerings and placement information, it is possible that

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[15] Correlation coefficients relating responses to items 21 through 23 are included in Appendix H.

CPAs who use salary information may tend to use placement information to assess the quality of accounting graduates.

The mean response rate of the variable "admission rates into graduate and professional programs" was 4.03 which is third in the ranking of the 16 mean responses. The median score was 4.00 and this variable had the lowest standard deviation (.75). The results suggest that the quality of accounting graduates can be partially measured in terms of acceptance rates into graduate and professional programs. The CPAs responding to this study are most likely aware of the rigorous admission standards of graduate and professional programs. The respondents may see high accounting quality accounting programs as providing better preparation for students to gain admission into graduate or professional programs.

Three paired samples t-tests were used to compare the mean responses for all combinations of items 21, 22 and 23. The only statistically significance ($p<.05$) between the pairs of main responses occurred between item 22 ("ranges of salary offerings") and item 23 ("placement information"). The mean responses for both items indicated that the respondents as a group seemed to view ranges of salary offerings and placement offerings as valid indicators of the quality of accounting graduates. Based on the t-test results, the respondents appear to perceive placement information as a significantly better indicator of quality of graduates than ranges of salary.

The t-test results did not indicate statistical significance ($p<.05$) for the pair of item 21 ("admission rates into graduate and professional programs") and item 22 ("ranges of salary offerings"). Statistical significance ($p<.05$) was also not observed for

the pair of item 21 and item 23 ("placement information). Based on the mean responses to items 21, 22 and 23, the respondents indicated all three variables were valid indicators of the quality of accounting graduates. However, the lack of statistical significance between the mean responses for the pair of items 21 and 22 implies that the respondents feel that admission into graduate and professional programs is about as effective at measuring the quality of accounting graduates as the ranges of salary offerings they receive. Further, the respondents apparently feel that admission rates into graduate and professional programs and placement are approximately equally effective measures of the quality of accounting graduates. Appendix M contains summary statistical data of the t-test results for the attribute category "Quality of Accounting Graduates".

Fourth Research Question: "How do CPAs perceive the effectiveness of currently used methods for accounting education quality assessment?"

Items 24 through 28 in Part 2 of the questionnaire identify the following five methods currently used to measure and report quality attributes of accounting programs: (a) item 24: Rankings of colleges and universities in popular magazines (such as U.S. News & World Reports), (b) item 25: Handbooks and guides containing descriptive and comparative data on colleges and universities (such as Lovejoy's College Guide), (c) item 26: Accreditation processes for assessing higher education accounting programs (such as AACSB or ACBSP), (d) item 27: Regulation through a governmental entity (such as coordinating boards), and (e) item 28: Perceptions of employers who conduct recruiting and hire accounting graduates (for example, preference of hiring accounting graduates from certain schools based on anecdotal experiences).

The methods identified were chosen subjectively but are assumed to be representative of the methods currently in use to assess quality in accounting programs. The goal of this part of the study was to collect and analyze data regarding how CPAs perceive the effectiveness of the five currently used methods identified for this study. The 92 respondents answered the items in Part 2 in terms of how effective they felt each of the five currently used methods was at assessing accounting program quality. The responses were coded as follows:

1 = Not at all effective

2 = Slightly effective

3 = Somewhat effective

4 = Fairly effective

5 = Highly effective

Items 24 through 28 comprise Part 3 and are included in Appendix B of this study. The responses for the 92 CPAs were analyzed as one group and the following descriptive statistics were calculated and ranked mean responses, minimum and maximum values for the five-point responses, standard deviation and median for each item, and overall frequency of responses for items 24 through 28 in each five-point response category. The descriptive statistics for Part 3 are summarized in Appendix N Correlations were calculated between each of the five assessment methods and the results are included in Appendix O.

## Fourth Research Question: Analysis of Results

Item 28, "Perceptions of employers who conduct recruiting and hire accounting graduates" had the highest mean response at 4.30 and a median response of 4.00. The respondents apparently consider "perceptions of employers" a fairly effective method for assessing the overall quality of colleges and universities. The high degree of employer involvement may explain the higher ranking of employers' perceptions of graduates as a fairly effective assessment method. As employers of accounting graduates, the CPAs of this study may have more confidence in assessment methodology which includes their involvement. Employer involvement with the assessment process may also partially explain why placement information (item 23 in Part 2) and ranges of salary offerings (item 22 in Part 2) were two variables that the respondents rated highly as valid indicators of the quality of accounting graduates attribute. Based on the premise that employer involvement was common to items 22, 23 and 28 in the study, a correlation analysis among the three variables was performed. As the results in Appendix O indicate, no significant correlation was observed between any of the three pairs of variables that included item 28 ($p>.001$). While items placement information and salary offerings are moderately correlated, no significant correlation exists between either placement information or salary offerings and perceptions of employers who conduct recruiting and hire accounting graduates. It is possible that the respondents were able to differentiate between the variables that measure quality of accounting graduates (such as placement information and salary offerings) and the methods used to measure quality (such as the perceptions of employers who conduct recruiting and hire of graduates). It appears that

the respondents are making a distinction between *what* is being measured and *how* it is being measured. However, this conclusion is only tentative because some of the difference may be a result of how the questionnaire was designed. The items relating to what is being measured are in separate parts of the questionnaire than the items relating to how the attributes are being measured. The respondents may be inclined to differentiate the two constructs because the questionnaire is designed in this manner. While the correlation coefficient item 28 and item 27 (regulation through a governmental entity) is significant ($r_s = .277$, $p<.001$), it implies little or no correlation between the two variables.

The second highest ranked item, relating to the respondents' perceived effectiveness of the accreditation process, had a mean response of 3.91 and a median response of 4.00. 75 % of the respondents viewed accreditation processes as either fairly effective or highly effective. Based on the results of the survey, CPAs seem to believe that the accreditation process is a fairly effective to highly effective method for assessing the quality of accounting programs. The perceived effectiveness of the accreditation methods may be partially attributable to the underlying quality of the accreditation agencies themselves. For example, CPAs may have confidence in the ability of an accreditation agency to assess the quality of colleges and universities that are subject to its accreditation. For the accreditation agencies to earn the respect of the business community, they must also adhere to a high level of quality in conducting their assessments. A correlational analysis between item 26 and item 28 (regulation through a governmental entity) revealed significance ($r_s = .273$, $p<.001$), but the correlation

coefficient implies only a weak relationship, if any, between the two methods of assessing quality in accounting programs.

Item 24 pertains to the widely used method for assessing the quality of accounting (and other) programs that is based on the published rankings of colleges and universities in popular magazines or other media. A closely related assessment method is the use of handbooks and guides that contain descriptive and comparative information of colleges and universities (item 25 in the survey). The mean responses on items 24 and 25 are very close: 3.32 and 3.5, respectively. Item 25 was ranked third in terms of mean responses and item 25 was ranked fourth. The median score on item 25 was 4.00, which implies that the respondents thought that handbooks and guides are somewhat effective to fairly effective methods of assessing accounting programs. However, the median score on item 24 was only 3.00, indicating that the respondents viewed published rankings as only somewhat effective. Correlations between items 24 and 25 were significant ($\underline{r}_s = .438$, $p<.001$) but imply at most a moderate degree of association between the two methods. The data suggest that that to a limited extent, the respondents perceived that published rankings of colleges complement the use of college handbooks and guides as methods for assessing accounting program quality.

The use of governmental regulatory agencies, such as coordinating boards, to assess accounting program quality (item 26) received the lowest mean ranking of 2.91 with a median score of 3.00. Based on the results of the survey, the respondents apparently see governmental as only somewhat effective in assessing accounting program quality. One possible interpretation of these results may be that the respondents consider

the private sector largely responsible for assessing accounting program quality. They may feel that government agencies should be involved with the assessment process, but only to a limited extent.

The overall frequency of responses to items 24 through 28 in each five-point response category was calculated and summarized in Appendix N. If the five methods in Part 3 are considered as a group, then only about 58% of the responses indicate that the five currently used methods included in the survey are fairly effective or highly effective. About 29% of the responses indicate that the methods are somewhat effective and roughly 14% of the responses indicate that the methods are not effective at all or only slightly effective for assessing higher education quality.

Also disclosed in Appendix N is the overall mean, or grand mean. The overall mean of 3.56 represents the mean of the mean responses for items 24 through 28. The overall mean of 3.56, which is approximately halfway between the response choices of "somewhat effective" and "fairly effective". Taken together, the summary statistics, the descriptive statistics and the correlational analyses suggest that the five currently used methods included in Part 3 are only moderately effective in assessing the quality of accounting education program.

The correlation coefficients in Part 3 implied low or, at best, moderate relationships between the five methods currently used to assess accounting education program quality. These results imply that the five methods selected for this study may not adequately measure the effectiveness of current methods used to assess quality in accounting education. To provide more conclusive insights in this area, future studies

may involve using more types of quality assessment methods or possibly restricting the scope of the types of methods in order to narrow the focus of the results.

Fifth Research Question: "How do CPAs perceive the potential use of assurance services in accounting education quality assessment?"

Nine statements (items 29 through 37) in Part 4 of the survey questionnaire were intended to gather data relating to how CPAs view the potential use of assurance services in assessing the quality of accounting education programs. Respondents were asked to comment on each of the nine statements using the following codes:

1 = Strongly disagree with the statement

2 = Disagree with the statement

3 = Undecided or not sure

4 = Agree with the statement

5 = Strongly Agree with the statement

The complete content of the statements in items 29 through 37 and the corresponding explanations and instructions for the respondents, are included in Appendix B of this study. One analysis for this phase of the study consisted of an interpretation of descriptive statistics relating to the responses in Part 4. The descriptive statistics items 20 through 37 appear in Appendix P. Correlations were calculated for each pair of statements in Part 4 and the resulting correlational matrix is shown in Appendix Q.

Fifth Research Question: Analysis of Results

Item 31 had the highest mean response, 4.14, and a median score of 4.00. The second highest mean response is 4.02 and is associated with item 35, which has a median

score. of 4.00. The results seem to indicate that the respondents agree with items 31 and 35. Assuming 3.50 is the cut-off point between the "undecided or not sure" and "agree with the statement" response categories, item 34 with a mean response of 3.64 and a median response of 4.00 suggests that the respondents agree with the corresponding statement. Although the mean score of 3.49 on item 30 places it slightly under the assumed cut-off between the "undecided or not sure" and "agree" categories, the median score of 4.00 suggests the respondents agreed with the statement, with a certain amount of uncertainty.

The last five items have ranked mean responses ranging from 3.41 to 3.08, and medians responses ranging from 4.00 to 3.00. Item 33 had a median response of 4.00 but a mean response of only 3.40, which is probably due to the fact that outliers in the "disagree with the statement" category accounted for over 21% of the responses. As indicated in Appendix J, approximately 58% of the respondents agreed or strongly agreed with the nine statements in Part 4. However, over 25% were undecided or not sure about whether or not they agreed with the statements.

The data analyzed for Part 4 indicated that the respondents agreed with the following three statements relating to the potential use of assurance services in accounting program assessment:

Item 31: "CPAs could serve as consultants to accounting educators and employers in developing uniform standards of quality in accounting programs",

Item 35: "Assurance services performed by CPAs should complement, but not replace, current methods of assessing quality", and

Item 34: “The level of knowledge, skills and expertise CPAs possess in the area of financial reporting could be extended to nonfinancial aspects of measuring quality in higher education accounting programs”.

To a lesser extent, the respondents agreed with the following statements:

Item 30: “Compared to some of the assessment methods currently in use (as described in Part III), assurance services performed by CPAs would add value to the assessment processes for accounting programs”

Item 29: “CPAs could expand their current range of services to include assessing quality attributes of higher education accounting programs”.

Taken together, the results of this phase of the study suggest that CPAs are interested in becoming more actively involved in the quality assessment process for higher education accounting programs. Apparently they perceive their role in accounting education as expanding into areas such as accounting education standard setting. Examples of the increased involvement of CPAs with the quality assessment process in accounting education include service on accounting advisory boards and the development of internship programs.

CPAs seem to agree that some of the currently used methods of assessment should not be abandoned. They apparently view assurance services as an enhancement, rather than a replacement, of traditional assessment such as the accreditation process. It also seems apparent that CPAs do not feel constrained by their traditional types of services, such as financial audits and tax services. The survey results suggest that CPAs view assurance services as a way of providing a much wider range of services, including

accounting education assessment. A tentative conclusion at this stage is that the results of this study seem to support the underlying premise of the theoretical model: that assurance services may have some potential use in accounting education assessment.

The responses to the other items of Part 4 suggest that CPAs are unsure as to their level of agreement with the following statements:

(Item 33): "CPAs performing assurance services would be highly independent from the institutions whose accounting programs they are assessing. Therefore, the information obtained would be more objective and less subject to bias than other methods of assessment",

(Item 37): "Assurance services could potentially offer an assessment method superior to assessment methods currently in use",

(Item 36): "Assurance services performed by CPAs could provide an alternative to accreditation for institutions with small accounting programs and limited resources", and

(Item 32): "New forms of assessing accounting programs, such as assurance services could replace current methods of assessment (such as those described in Part III)".

The mean and median responses to Items 33, 37, 36 and 32 imply that the respondents were uncertainty as to whether they agreed or disagreed with the statements. these statements had a common concept: they all suggest that assurance services are superior than existing methods of accounting education assessment. The respondents appear to be cautious about whether current methods of assessment should be replaced

entirely by assurance services. The indecision of the respondents in this area may be related to the fact that assurance services have only been in use for a few years and assurance services relating to accounting education assessment have never been implemented. As a result, no empirical information exists for assurance services relating to accounting education. The respondents did not have actual data for comparison purposes and, since they may have been reluctant to speculate about the potential superiority of assurance services, they responded with a disclaimer on those four items.

Correlation coefficients were calculated for each pair of the nine items in Part 4. The correlation coefficient matrix in Appendix Qindicates that 25 of the paired items (approximately 69% of the total combinations) were significant at $p<.01$ and another 4 items (approximately 11% of the paired combinations) were significant at $p<.05$, using a two-tailed test. The correlation results seem to indicate that the nine statements in items 29 through 37 are interrelated. The tentative conclusion is that the nine statements taken together appear to be valid measures of CPAs' perceptions of the use of assurance services in accounting program assessment.

Sixth Research Question: "Are the perceptions of CPAs in public accounting positions different from the perceptions of CPAs in non-public accounting positions with respect to the potential use of assurance services in accounting education quality assessment?"

If assurance services were ultimately used to evaluate quality in higher education accounting programs, CPAs in public accounting would be the most likely group in the accounting profession. CPAs in the non-public category would probably not offer assurance services because of the nature of their positions. Because CPAs in public

accounting would be directly involved with providing assurance services, their perceptions of assurance services might differ from CPAs who are in non-public accounting positions.

To test for possible differences in perceptions of assurance services between the two groups, a one-way Analysis of Variance (ANOVA) was used to analyze the data. The treatment was defined as the type of position held by CPAs. Two treatment levels were specified: the public accounting group and the non-public accounting group. A two-tailed test was used with the confidence level set at .05. A separate ANOVA was run for each of the nine statements in Part 4. An ANOVA was also run for the average of the nine responses. The results of the analysis for each of the ten ANOVAs appear in Appendix R.

Sixth Research Question: Analysis of Results

The results of the analysis did not disclose any significant differences between the public accounting group and the non-public accounting group on any of the nine individual statements relating to perceptions of the potential use of assurance services for accounting education program assessment. The average of the responses for the nine items also did not indicate any significant differences.

It might be expected that CPAs in public accounting would be in favor of using assurance services in accounting education assessment because of the possibility of generating additional fees and creating a new market for their services. It might also seem logical that CPAs in the non-public accounting group would perceive assurance services differently than CPAs in public accounting. The lack of any significant differences between the public and non-public accounting group may be attributable to

homogeneity of the two groups. All respondents in the study were CPAs who have similar levels of education, training and licensing requirements. Another possible explanation might be that CPAs in the non-public accounting group offer a completely different set of services than CPAs in public accounting. The potential introduction of assurance services to quality assessment in accounting education would probably not be viewed as a threat to the respondents in the non-public accounting group because the operate in a different market. If this assumption is correct, the responses from the CPAs in the non-public accounting group would probably be less prone to bias. They would be less likely to respond negatively about assurance services if they did not feel threatened by them. As a result, CPAs in the non-public accounting group may view assurance services as a way to improve the overall quality of accounting education. The non-accounting group may view this as a way of improving the quality of their workforce hiring more qualified accounting graduates who meet the needs of their organizations. The non-accounting group may also view assurance services as an opportunity to provide more direct input into the accounting education process in a manner that better meets their needs.

# CHAPTER 5

## SUMMARY, MAJOR FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

### Summary

The problem of this study was to examine perceptions regarding the feasibility of using assurance services to assess quality in higher education accounting programs. Assurance services are a type of service that CPAs have been offering to the public in the public since about 1993. Unlike traditional services performed by CPAs, such as financial audits or compilations, the scope of assurance services is broadly defined to include any independent professional service provided to decision makers that improves the quality of information or its context (AICPA, 1998b). Because assurance services are subject to few limitations, measurement criteria can be expressed in quantitative (including financial) or qualitative terms.

Quality in accounting education programs is currently assessed using a number of different methods, such as rankings in publications, accreditation, and perceptions of employers who recruit and hire graduates. According to the current literature, certain current methods for assessing the quality of education could be potentially misleading. Some of these shortcomings were considered in the development of the theoretical model used in this study. Since assurance services are designed to use independent CPAs to improve the quality of information, the theoretical model was based on the concept

that assurance services could have a potential role in assessing quality in accounting education programs. Assurance services are not currently used to assess quality in accounting education. Therefore, the results of the effectiveness of assurances cannot be measured directly due to a lack of empirical data. This study focused on how CPAs would perceive the potential use of assurance services to assess quality of accounting education programs. A survey questionnaire was used to measure perceptions of CPAs regarding the use of current assessment methods and the potential use of assurance services for accounting education quality assessment. CPAs were selected for the sample for several reasons. First, because they hire accounting graduates, CPAs are primary users of the outcomes of an accounting education system. Second, if assurance services were to be used to assess quality in accounting education, CPAs in public accounting would be providing the services. CPAs in non-public accounting positions would probably not be providing assurance services. Therefore, perceptions of CPAs in public accounting positions could be compared to perceptions of CPAs in non-public accounting positions. Third, CPAs comprise a fairly homogeneous group, thereby permitting a smaller sample size. Finally, a database of randomly selected names of CPAs was readily available from the American Institute of Certified Public Accounts which facilitated data gathering procedures. Because the questionnaire was designed specifically for this study, a pilot study was conducted.[16] After the data from the pilot study was analyzed, a panel of experts reviewed the questionnaire for validity and

[16] Prior to mailing the questionnaire, permission from the Institutional Review Board was obtained to conduct research on human subjects. Appendix C contains copies of the approval forms.

reliability. Based on the recommendations of the panel, minor revisions were made to the questionnaire. Initial and follow-up mailings were made and a total of 92 completed questionnaires were received from the two mailings. The responses from the questionnaires were entered into a database and the data were analyzed using SPSS for Windows 10.0. Copies of the cover letter for the initial mailing and the revised survey are included in Appendix B and a copy of the cover letter for the follow-up mailing is included in Appendix D.

## Major Findings

To test for potential bias between the initial responses and the follow-up responses, an independent samples t-test was performed. No significant differences were observed between the mean responses from the initial mailing and the mean responses from the follow-up mailings. Therefore, the 92 responses were treated as one group[17]. A summary of the results of these t-tests is shown in Appendix E.

Each research question was answered based on an analysis of the data obtained from the questionnaires. The first research question related to the major categories of positions within the accounting profession. An analysis of the sample indicated that approximately 35% of the respondents are in public accounting positions and approximately 65% of the respondents are in non-public accounting positions. The categorical percentages are consistent with percentages at the national level, implying

[17] For the sixth research question, the 92 respondents were divided into two separate groups: CPAs in public accounting positions and CPAs in non-public accounting positions.

that this sample of CPAs is representative of the population of CPAs in terms of accounting profession demographic categories.

The second research question related with CPAs' level of familiarity with several services typically performed by CPAs. Descriptive statistics were calculated and the findings in this area of the study indicate that CPAs are highly familiar with tax services and financial audits, but only have a limited level of familiarity with the areas of financial planning, operational audits and assurance services. The lack of familiarity with financial planning or operational audits may be attributable to their highly specialized nature and the fact that only a few respondents were employed in these areas. Because assurance services is a new area of accounting which few firms re currently offering, a low level of familiarity could be expected. Detailed descriptive statistics relating to the respondents' level of familiarity of services performed by CPAs is included in Appendix F.

The third research question examined how CPAs viewed certain variables commonly used to measure the quality of accounting education programs. 16 variables assumed to be representative of the input, process, and output quality attributes of accounting education programs were included in Part 2 of the questionnaire. The respondents in this study were asked to express their opinions as to how valid each of the 16 variables were in assessing the associated quality attribute. For example, the respondents were asked to comment on whether or not average SAT scores, which was one of the 16 variables, was a valid measure of the quality of admission standards relating to incoming accounting students[18]. The findings indicated that approximately 62% of the

[18] In a broader sense, this variable is associated with an input quality attribute.

respondents either agreed or strongly agreed that the 16 variables were valid measures of the corresponding quality attributes. 25% of the respondents were undecided or not sure about the validity of the variables and 13% either disagreed or strongly disagreed that the items were valid measures of the corresponding quality attributes. The 16 items in this is part of the survey were grouped into five quality attribute categories. Correlations were calculated between the pairs of variables within each attribute category. The results appear as a set of five correlation matrixes that are presented in Appendix G. Significant correlations were found between most of the 16 pairs of variables. These results suggest that Part 2 of the survey was effective in terms of measuring how the respondents perceived whether or not 16 items were valid indicators of quality. The items in Part 2 appear to have measured what they were intended to measure.

Part 3 of the survey was designed to gather data related to the fourth research question, "How do CPAs perceive the effectiveness of certain currently used methods of accounting education assessment?". The following five methods currently used to assess quality in accounting programs were selected for analysis: (1) rankings of colleges and universities in popular magazines, (2) handbooks and guides containing descriptive and comparative data on colleges and universities, (3) the use of the accreditation process, (4) regulation through a government agency, and (5) perceptions of employers who recruit and hire accounting graduates. Descriptive statistics and correlations were calculated and the results are included in Appendix H.

The respondents ranked perceptions of employers who recruit and hire accounting graduates as the most effective of the five methods currently used to assess accounting

education quality. Significant correlations were observed on three of the ten pairs of methods. The correlation coefficients on those three pairs were considered low to moderate.

Part 4 of the survey questionnaire consisted of nine items relating to the fifth research question, "How do CPAs perceive the potential use of assurance services in accounting education quality assessment?". The respondents were asked to disclose their level of agreement with each of nine statements regarding thepotential use of assurance services to assess quality in accounting education programs. Descriptive statistics and a correlation matrix for the paired statements are included in Appendix I. The results seem to indicate that the responding CPAs are interested in becoming more involved in the quality assessment of accounting education. The respondents do not seem to be in favor of replacing current methods of quality assessment with assurance services, but they appear to perceive assurance services as a another method that could be used to enhance the overall effectiveness of quality assessment in accounting education.

In analyzing the results of this phase of the study, the respondents appear to favor the use of assurance services with some reservations. Since assurance services are relatively new and have never been used in educational, the respondents apparent hesitation seems logical. In general, the results of the survey appear to support the concepts developed in the theoretical model.

The sixth research question was designed to compare perceptions of the potential use of assurance services to assess quality in accounting education between two groups: CPAs who hold positions in public accounting and CPAs who hold non-public

accounting positions. The goal of this phase of the study was to explore the possibility that CPAs in public accounting may have different perceptions of the use of assurance in quality assessment than CPAs who are not in public accounting. CPAs are usually considered to be a fairly homogeneous group. However, CPAs in public accounting on the basis that they would probably be a position to offer assurance services, whereas CPAs in non-public accounting positions typically would not. Therefore, another goal of this study was to determine if there was a significant difference analysis the study .

The 92 respondents were split into two groups: CPAs in public accounting positions and CPAs in non-public accounting positions. A one-way ANOVA at the .05 level of significance was used to analyze the responses in Part 4 relating to the potential use of assurance services for assessing quality in accounting education. No significant differences were observed on any of the nine statements. A test using the average of the nine items in Part 4 also did not indicate any significant differences between the two groups. Several possible explanations may account for the absence of differences in responses between the two groups. One possible explanation may be related to the homogeneity of the population of CPAs. It is likely that CPAs in public accounting positions would provide assurance services and CPAs in non-public accounting positions would not. However, the two groups may be similar in a number of other areas that this particular difference may not be sufficient to generate statistical differences.

Another possible explanation for the absence of significant differences may be that CPAs in the non-public accounting by view assurance services as a type of service that would not compete with the services they offer. This could potentially remove some

of the bias that could be present if they felt threatened by the introduction of assurance services. In other words, if CPAs perceived that assurance services might potentially encroach on the services they offer, their responses might be biased against assurance services.

## Conclusions

A review of the findings of this study resulted in the following conclusions:

1. CPAs in public accounting comprise approximately 35% of the accounting profession. The remaining 65% of CPAs hold positions in management accounting, government, and non-for-profit. 60% of all accounting positions are in the management accounting category.

2. Most CPAs have extensive knowledge in the areas of tax and financial auditing, but limited knowledge in the areas of financial planning, operational auditing, and assurance services.

3. CPAs consider certain established criteria, such as SAT scores and faculty-to-student ratios, to be effective measures for assessing quality attributes in accounting education programs.

4. Traditional methods currently used for quality assessment in accounting education programs are perceived as only moderately effective by CPAs.

5. CPAs regard the perceptions of employers who are involved with the recruiting and hiring of accounting graduates as an effective method currently in use for assessing the quality of accounting education programs.

6. CPAs are apparently seeking increased involvement with accounting education quality assessment and formulation of educational standards.

7. The potential application of assurance services to accounting education quality assessment is viewed by CPAs as a way for to offer a wider range of services to the public.

8. CPAs perceive assurance services as a type of quality assessment that can be used to complement, but not replace, some of the more effective traditional methods.

9. Assurance services are seen by CPAs as a way of enhancing the quality assessment process for accounting education.

## IMPLICATIONS

This study was primarily based on a quantitative paradigm. A 1996 qualitative study was conducted involving the potential role of CPAs in higher education quality assessment[19]. The earlier study was a forerunner to this study and related to the potential use of the attest function of CPAs, as opposed to assurances services of this study. The qualitative study obtained data through interviews, as opposed to questionnaires. For this study, the CPAs who supplied the data were from one a relatively homogeneous group, whereas the subjects in the earlier study were selected from two different comparison groups: (1) CPAs and (2) individuals employed at two year and four year colleges and universities who held either faculty or administrative positions. Although the two studies have some fundamental differences relating to research methodology, the earlier

[19] Excerpts from the 1996 qualitative study are included as Appendix A of this study.

qualitative study seems to support some of the findings of this study. Both studies suggest that CPAs can play an active role in higher education quality assessment.

Assessing the quality of higher education accounting programs through the use of assurance services performed by CPAs seems to have substantial support from CPAs, college faculty and college administrators. The purpose of this study was not to develop specific guidelines and standards for the application of assurance services within a higher education context, but rather to obtain perceptions regarding the potential use of a new quality assessment theory for accounting education programs. The overall perceptions of the CPAs in this study and the findings in the earlier qualitative study seem to indicate that assurance services may be a feasible method for assessing quality in accounting education programs. Future research is needed to gain additional insight into the viability of this concept.

## RECOMMENDATIONS FOR FUTURE RESEARCH

Based on the findings of this study, the following recommendations for further research are proposed:

1. Performing a replication of this study with the same content using a larger sample from a larger geographical area.

2. For Part 1 of the survey instrument, which relates to demographic information, collapse the accounting position categories into 2 or 3 job categories, such as public accounting, management accounting and governmental / not-for-profit accounting. Consider including another demographic category for number of years experience in accounting.

3. Part 2 of the survey should include other measurement variables, such as retention rate. Include key variables used in commonly used current methods of assessment. For example, what measurement variables are used in ranking assessment methods or what variables are used in with accreditation assessment methods?

4. Part 3 of the survey pertained to perceptions of currently used methods of quality assessment. This part of the survey only included five unrelated assessment methods, which apparently contributed to the content validity problem in this section. This could possibly be alleviated by using broader categories instead of highly specific methods. The scope of the choices could be expanded, but the overall length of the survey should not be excessive.

6. Replicate the study using accounting faculty at colleges and universities as the target population. The study could be also be replicated using college and university administrators as the target population. Revisions to some parts of the survey would be necessary and a pilot study would need to be conducted.

7. Replicate the study by using the following subgroups: public colleges, private colleges and size of the institution.

8. Explore potential independence issues that could arise if CPAs perform assurance services for the colleges or universities they attended or are currently attending.

# APPENDIX A

## EXCERPTS FROM PRELIMINARY QUALITATIVE STUDY: PERCEPTIONS OF THE ROLE OF CERTIFIED PUBLIC ACCOUNTANTS IN EVALUATING QUALITY IN HIGHER EDUCATION

(Appendix A was adapted from a field report submitted in partial fulfillment of the course requirements of EDER 6280, Qualitative Research in Education at the University of North Texas, Fall 1996).

## Background of the Project

Early in1995, I began to develop ideas for a potential dissertation topic. As a doctoral student in higher education, with a minor in accounting, my goal was to find a dissertation topic that would involve research in both my major and minor areas. Given these two parameters, the scope of subject matter was fairly broad. By the end of the summer, I had narrowed my focus to four areas that seemed promising for the type of study I wanted to conduct.

I eventually decided to use a topic based on an article in the Chronicle of Higher Education[20]. In this article, Arthur J. Rothkopf discusses ways in which the services of certified public accountants (CPAs) could be used to improve the current rating system of colleges and universities. I first became aware of the article during one of my doctoral courses in higher education in the fall of 1995. As part of a class presentation, two other students distributed copies of the article. As I was reading the article, I thought that this would make an ideal topic for a dissertation. Within a few minutes, my major professor commented that this could be my dissertation topic. This serendipitous experience led me to pursue the topic further as a potential topic for my dissertation.

Prior to this study, I had written two unpublished papers relating to my proposed dissertation topic. The first paper, Assessing Quality in Higher Education: Development

of a Model Using Audited Financial Data, was written in December , 1995 and submitted to my major professor to partially fulfill course requirements. I discussed y proposed dissertation with my minor professor and gave her a copy of the paper to review. She encouraged me to explore this topic, providing helpful comments and suggestions.

The other paper, Quality Assessment in Higher Education: Measuring Outcomes Using the Attest Function of Certified Public Accountants, was written in the form of a dissertation proposal. This paper, written in August, 1996 was revised and used as a model for my dissertation proposal.

The goal of this project is to study how the CPA's role in evaluating quality in higher education is perceived by two diverse groups of individuals. I refer to the first group as academics: college and university administrators and faculty. The second group consists of CPAs in public accounting. The qualitative paradigm used in this project allowed me to focus on attitudes and viewpoints rather than procedures. Up to this point, I was not sure how the concept of using CPAs to evaluate quality in higher education would be accepted by either academics or the CPAs who would be providing this type of service. I plan to use a quantitative paradigm for my dissertation research, but one of the most useful outcomes of this qualitative project was that it helped to indicate the viability of my dissertation proposal topic. I used the following research question to focus this project and as a basis for conducting interviews: How do certified public accountants and academics perceive the potential role of CPAs in evaluating attributes of quality in higher education institutions?

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[20] A copy of this article, cited in Chapter 1, was given to some of the interviewees to help explain my research projects

## CONTEXT OF THE PROJECT

Before beginning the project, I obtained authorization from the University of North Texas to use human subjects for the interviews. I also obtained permission from Pine Hollow Community College[21] to conduct interviews with their faculty and administrators. Properly signed consent forms were obtained from all subjects prior to conducting the interviews.

### Setting

The setting was of minor importance for this project, although two of the interviews were conducted at restaurants, where background noises proved to be occasionally distracting. Most of the interviews were conducted at the subjects' offices, but two were conducted at the subjects' homes. Another problem with collecting data occurred at the office of one of the CPAs. I had situated the microphone for the tape recorder on his desk and inadvertently placed it close to his computer terminal. Apparently, the audio tape picked up some magnetism from the computer, resulting in a loud humming noise on the tape. In future interviews, I paid more attention to setting up the recording equipment.

### Subjects and Groups

I interviewed a total of 10 subjects, 5 from the academic group and 5 from the CPA group. All but 1 of the subjects were selected based on my previous contact with these individuals. 5 women and 5 men were interviewed. Pseudonyms are used for the names of the subjects in order to protect their anonymity.

Within the CPA group, all subjects were partners in CPA firms. One subject was a partner in a large regional public accounting firm, whereas the others were partners in

[21]Pseudonyms are used for all higher education institutions and CPA firms in this project.

local firms. The academic group reflected more diversity concerning positions held: One was a retired faculty member at a large public university, 1 was a department head at a 2-year community college, 2 worked in student activities at the public university, and 1 was the controller for the same institution. All subjects interviewed were in positions of authority and were knowledgeable about the subject matter of my research.

Interviews

Because I was interested in studying the perceptions of two groups, academics and CPAs, in relation to the potential role of CPAs in evaluating quality in higher education, I decided to conduct interviews with subjects from both groups. Unstructured interviews were conducted in an attempt to obtain more of an emic perspective and to learn more of the subjects' viewpoints. All but one of the interviews were audio taped, and the interviews ranged from 15 minutes to over 1 hour in length. One of the shorter interviews was transcribed in total, but the others were summarized in my field notes. I conducted one interview with each subject over a 2- week period during November 1996.

## Methodology

Throughout the course of each interview, I tried to maintain an emic perspective as much as possible. I normally used the research question (or a paraphrased version of it) to begin each interview. This usually stimulated the subject's thinking about some area of higher education. I also brought the following additional questions that I would bring to the interview, but did not always use them:

1. As a(n) (administrator/ faculty) at your institution, do believe the traditional methods for evaluating quality in colleges and universities are adequate?
2. If not, in what ways might the quality assessment process be improved?
3. Do you feel that the traditional quality assessment process is too subjective and

biased?

4. Do you think that independent Certified Public Accountants (CPAs) might have a role in assessing qualitative attributes (such as quality of library resources, computer facilitates, campus housing, etc.) at colleges and universities?
5. Do you think CPAs should perform assessment services of a nonfinancial nature for colleges and universities, or should the accounting profession continue to provide only financial-related services, such as auditing and tax, to these types of clients?
6. CPAs place a great deal of emphasis on independence with respect to the financial attest function, commonly referred to as financial audits. Do you feel CPAs' independence would be impaired if they undertook attest engagements relating to nonfinancial attributes of quality at institutions of higher education?

I kept these questions with my field log and used them more as general guidelines and points of reference than as specific questions to ask. I tried to employ an unstructured format as much as possible, a strategy that had advantages and disadvantages. A major advantage was that I was able to get more of an emic perspective by letting the interviewee direct the discussion. Most of the time, the subjects felt comfortable doing most of the talking: They were not hesitant about stating their views and giving their perspectives. This was important to my research question, because I sought to gain insight into perspectives and viewpoints rather than formal theories regarding quality assessment.

The most notable disadvantage of using the emic approach was that sometimes

the interviewee's discussion would drastically depart from the subject. Two of the subjects, for example, tended at times to diverge, relating anecdotal job experiences that had little to do with the subject of quality assessment in higher education. I tried to overcome this problem by returning the conversation back to the subject as diplomatically as possible.

Another problem in the data-collection process was that sometimes I would incorporate something from one interview into subsequent interviews. For example, I felt that Bill Newcomb, a CPA, made some good points concerning the use of CPAs to conduct student evaluations at colleges. His strategy made sense to me on the basis of increased objectivity. However, when I mentioned this strategy to other interviewees, I was introducing an element of personal bias into the interview process by conveying my support for this approach. In another case, I had been interviewing Kathyrn Monroe, a retired faculty member from a large public university. She was still actively involved in higher education as a grants writer, and she suggested that CPAs could be included as part of an accreditation team to evaluate quality at higher education institutions. I thought this was a very good idea, but again, I injected my personal bias by advocating this position during subsequent interviews. As I became aware of this problem of subjectivity during my data analysis, I attempted to refrain from relating details of previous interviews while I was interviewing another subject.

## Data Analysis

After the interviews were taped, I attempted at first to transcribe the interviews verbatim. I did this completely for one interview and started to transcribe another interview. Given the amount of taped interviews and the time constraint, I decided it would be more efficient to summarize the main ideas for each interview in my field notes. I listened to most of the taped interviews several times and combined my

summary notes with my field notes from the interviews. Not including the interview I transcribed verbatim, I had 35 hand-written pages of summary field notes of the interviews, using separate pages for each interviewee. In deciding how to classify the data from the interviews, I used three broad categories which were patterned after the categories that emerged from the review of literature: concepts of quality in higher education, quality assessment in higher education, and applications of the attest function in higher education. I highlighted important areas in the interview summaries, using a different color highlighter for each of the categories. A problem I encountered as I was coding the data was that some of the ideas in the interviews did not fall into one of the categories or that some of the concepts to overlapped into several categories. I made another observation during this phase of the data analysis. Although I intended to use an emic approach as much as possible during the interviews, as I was coding the data into categories, it became obvious that, to a certain extent, my previous research had directed the interview process. Therefore, the data-collection process contained elements of an etic, as well as an emic, perspective. The etic perspective did not appear to dominate the interview methodology and seemed to help focus the interviews.

The next three sections present the major perceptions of the subjects in each of the three categories. The following symbols are used to indicate the project group membership of the subject expressing the corresponding perception idea:

A INDICATES THE ACADEMIC GROUP

C indicates the CPA group.

Because the perceptions are not verbatim accounts of the interview discussions, a certain amount of researcher bias is involved.

Concepts of Quality in Higher Education

C (Paul Owens, a sole proprietor who also works as an accountant in industry):
Quality of teaching could be evidenced by types of degrees held by professors and their academic and professional experience.

C (Steve Matthews, an audit partner in a large regional public accounting firm):
CPAs could act as liaisons between colleges and business by helping colleges design curricula that meet the needs of employers. CPAs could also assist the colleges with internal administrative policies and procedures, such as development of hiring practices.

C (Larry Easton, managing partner of Easton and Dillon, PC, a local public accounting firm):
Colleges and universities are not keeping up with what employers want from graduates. A stronger internship program is needed. Colleges should monitor supply of graduates and restrict the supply in fields which become overcrowded, as medical schools do.

C (John Hurst, partner in the local public accounting firm of Brandon and Hurst, PC):
College should prepare students not only for careers but life. The qualifications of students accepted at a particular college could be considered one attribute of quality.

C (Bill Newcomb, a sole proprietor):
Colleges and universities should be pulled into the "real world"

A (Betty Lewis, program coordinator at South State University, a 4-year public institution):
The quality of any institution should relate to its mission. Higher education cannot be "all things to all people," and an institution must be able to articulate what it represents. Resource allocation is a quality issue. Higher education must get away from complacency.
Colleges and universities should try to collaborate with each other to improve quality,

rather than focusing on competition for students.

Quality Assessment in Higher Education

A (Helen Jackson, English and Humanities department chair at Pine Hollow Community College, a 2-year institution):

Retention rates are often used to assess quality, but they should not be used in isolation. High retention rates are not always indicators of quality, but a high attrition rate should be examined to determine the underlying causes. Some factors relating to high attrition may be beyond the control of the institution or individual instructors, such as students who overcommit on their classes while trying to work full time and support a family.

A (Ann Kotter, Director of Student Activities at South State University):

College handbooks, magazines, etc. which provide information on higher education are helpful, but the information is self-reported and not subject to outside verification. A more uniform basis for assessing quality is needed: The public does not understand how the data were compiled. Some of the ways colleges are currently assessing quality [internally] include talking with employers to find out what courses should be offered and tracking graduates to find out where they went to work, their positions, salaries, etc. Standardized expectations could be developed for certain student services. For example, the college health center is run very much like a business, and standards could be set for the level of services expected by the students.

A (Betty Lewis):

It is difficult to measure the impact of the college in terms of what causes change in a student's life. Numbers and statistics are subject to manipulation. Needs assessment could be given to incoming students and exit exams could be administered to graduates to try and assess the learning which took place.

A (Kathyrn Monroe, grant writer and retired faculty , South State University):
Current measures for evaluating quality are not adequate; other measures need to be found. Accreditation is about the only standard we have, nationwide.

C (John Hurst):
Exit exams have some merit, but they should be standardized across the country. Different types of exams should be given for different disciplines.

C (Larry Easton):
The rankings which appear in college handbooks and magazines are mostly based on self-reported data. The publishers should be required to disclose how the data were obtained and that the information was not subject to verification by an independent party. Rankings should take into account excellence in various disciplines as well overall rankings. The only group that can do a meaningful evaluation of the product that a college produces is the employers.

C (Steve Matthews):
Whoever does the rankings and ratings [for college handbooks and magazines] creates their own set of criteria. The public who uses this information is not familiar with what goes into the rankings and ratings.

C (Paul Owens):
Certain areas of higher education institutions are more important than others. More emphasis should be placed on academic areas, for example, than areas such as student services. In the evaluation process, a weighting technique could be used to establish the relative importance in various areas.

Application of the Attest Function in Higher Education

As previously mentioned, application of the attest function performed by CPAs within a higher education context could be considered a subcategory, or specialized case,

of quality assessment in general. The previous two categories provide a broad perspective leading up to the content of the attest function category. The research question for this project is How do certified public accountants and academics perceive the potential role of CPAs to evaluate attributes of quality in higher education? This section of the data analysis brings the research question into focus by obtaining perceptions from subjects regarding the attest function and higher education.

A (Ellen Beck, controller at South State University):

At all public higher education institutions within this state, the attest function of CPAs is currently being used to evaluate quality at these institutions. State auditors, who are completely independent of the colleges and universities they are examining, routinely perform a number of audits that are not strictly financial in nature. Ellen gave some specific examples of the types of attest engagements performed by the state auditors:

1. Performance measures audits: Auditors examine evaluative criteria such as the faculty/student ratios at colleges and universities, resource allocation measures, and graduation rates.

2. Management control audits: These types of audits are required by various accreditation agencies and focus on the flow of information within a higher education institution. The auditor is concerned with how the governing board is kept informed and the extent to which policies and procedures are in place and being followed.

3. Formula funding audits: Auditors are concerned with the veracity of calculations and the information used in the calculations. (She also gave an example of a situation in which the state auditors had to issue a disclaimer in their attest opinion relating to one area of their engagement. Part of the data used in the calculations involved minority pass rates. Because ethnicity is a self-reported measure (on the part of

students), the state auditors are not able to verify this and therefore must issue a disclaimer on this phase of the attest engagement.

These were only a few examples of the many types of attest engagements conducted by state auditors for a wide range of institutional programs. The criteria for the CPAs to test are developed by the state legislature.

We also discussed the nature of rankings and ratings published by magazines and college handbooks. Ellen felt that the public is not aware of the inconsistencies in data gathering and reporting for these types of publications.

C (Steve Matthews):

The role of CPAs has changed as the needs of their user groups has changed. CPAs essentially "bring three things to the table: objectivity, independence, and expertise." In the past, the expertise of CPAs has mostly been financial in nature. In more recent years, however, CPA firms have begun to use individuals from a variety of professions, such as nursing and engineering, for a wider range of advisory engagements. The American Institute of Certified Public Accountants (AICPA) recently formed a task force to examine the roles of CPAs into the 21st century. Their findings indicate that the value of historical financial information will not be as relevant in the future as more users of information demand "real time" information, as opposed to waiting several months for audited data. The AICPA predicts that CPAs will begin to move away from audits and attest engagements and move closer to assertion services. Steve illustrated the concept of assertion services by using an example of a nursing home that engages a CPA firm to test the assertions made by the nursing home's management. This goes beyond financial information: CPAs would also perform tests to ensure that the residents of the home are receiving the services they contracted for, such as meals and medications. Steve gave a specific example relating to higher education. Under the Single Audit Act

of 1984, institutions receiving certain levels of federal funding are required to provide selected nonfinancial information that has been examined by CPAs using the attest function. He pointed out that CPAs have extensive experience in collecting evidence, evaluating the evidence, and issuing an opinion on their findings. Therefore, he perceives attest engagements for colleges and universities as a "natural outgrowth" of what they are currently doing.

C (Paul Owens):

If attest engagements were performed, too many disclaimers might result [as part of the attest opinion]. For this type of service to be meaningful, a complete review of all nonfinancial measures would be needed. Ideally, this type of engagement for higher education institutions would be mandatory, but it is difficult to say how it would be enforced, and by whom.

C (John Hurst):

Using the attest function to assess quality in higher education, but it must be clearly stated who is accepting the responsibility for the information. Otherwise, many lawsuits could be initiated. Any information not verified by the CPA should be disclosed separately, accompanied by an appropriate disclaimer. The biggest problem with these types of engagements relates to the fact that so many things are subjective and therefore difficult to measure objectively.

A (Ann Kotter) [Discussing financial statements prepared for a student organization at her institution]:

A local CPA takes the books and [compiles] financial statements that are understandable to the user. The user also knows that the information was verified by an independent third party. There are a lot of areas in higher education that could be evaluated by CPAs.

A (Kathyrn Monroe):

> I would think that the skills and very specific knowledge that CPAs have developed and/or learned . . . might have the same capacity of transferability to other areas of measure. Typical techniques of measuring financial stability, and so forth, might also be applied in other areas.. . . . Colleges of education usually when they are accredited would have outside professors coming in from other universities to do this. I could see the possibility of CPAs being a part of that team. And CPAs who are also university professors might have an additional certification in this area.

A (Helen Jackson) [in discussing possible impairment of CPAs independence if attest engagements were performed]:

This should not be a problem. The profession does a good job of regulating itself. [in discussing using CPAs to evaluate nonfinancial areas of higher education]:
There could be a problem with having nonacamedicians assess quality in higher education. Too many outside agencies telling a college what to do could adversely impact the mission of the institution.

Another problem I encountered as I was analyzing the data related to the selectivity of information. By summarizing the interview content in the above manner, I was leaving out a substantial amount of data. I attempted to resolve this problem extent by reviewing the field notes several times to ensure that what I included in the field report reflected the perceptions of the interviewees as much as possible. I tried to focus on their main ideas and omitted many of the minor or incidental points to make the data more concise.

## Data Interpretation

Taylor and Bogdan (1984) defined analytic induction as "a procedure for verifying theories and propositions based on qualitative data" (p. 127). This project

appears to conform to the analytic induction approach to qualitative theory development. However, the project is only partially completed, and no definite conclusions can be reached regarding perceptions of the role of CPAs in evaluating quality in higher education.

The data suggest that subjects from both groups agree that CPAs could be used in some capacity to evaluate nonfinancial quality factors in higher education. There also appears to be agreement among the subjects that the current methods used by college handbooks and magazines to rank colleges and universities are inadequate. The responses indicated the existence of problems with respect to how the data are collected, how the criteria are developed, and how the information is reported. In addition, some subjects stated that no uniform set of standards or criteria exists for these rankings and ratings. In general, the subjects felt that the readers who use this information do not understand the underlying data or measurement criteria.

The subjects have diverse perceptions regarding what attributes of quality, in addition to financial attributes, in higher education could be evaluated by CPAs. However, an interesting pattern developed among the responses within the CPA group. For about half of the subjects in this group, perceptions of higher education quality seemed to be related almost entirely to the effectiveness of college in preparing its graduates for a specific job. These subjects believed that higher education should provide more training as opposed to education. Another unsettling finding from this subgroup was their perceptions of employers as the primary stakeholders in higher education. It is interesting to note that one of the subjects in the academic group explained how her university attempts to ascertain from employers what attributes they seek from their graduates. The university then attempts to pattern their academic programs with the needs of prospective employers in mind. These two viewpoints suggest conflicting

theories of quality and should be explored with future research. A potential research question might be What attributes of quality are perceived as important by higher education institutions and prospective employers?

## Meta-Analysis of the Project

My overall conclusion for the beginning phases of this project is that general agreement exists between academic groups and CPAs practicing in public accounting insofar as the potential role of CPAs in evaluating quality in higher education institutions. Constituents of both groups agree on the feasibility of using the attest function performed by CPAs to evaluate quality in higher education. However, there seems to be less agreement, both within and among the two groups, as to what specific attributes of quality should be measured.

The analyzing and interpreting phases of this project was the most difficult. Even with the relatively short time I spent in the field, a large amount of data were collected. It was difficult to decide which data, and how much, were useful for the project. To complete the research for this project, I would need to interview more subjects from a broader range of higher education institutions and public accounting firms. For example, larger CPA firms, including some of the so-called "Big-Six" accounting firms, should be a part of the study. I would also need to interview individuals in a wider range of positions. It is sometimes difficult to know how to interpret the data, especially with the limited amount of time and information. Theory development would require the accumulation of more data. In interviewing subjects in the future, I would try to keep the discussions more focused.

An analogy to the automotive industry may help to explain how this project enabled me to gain more insight into research. Several years ago, Ford Motor Company introduced an automobile that executives were certain would be successful. It was a an

extremely well-made car, but unfortunately, sales were dismal. This car, the Edsel, was mechanically sound, but it soon became a metaphor for any type of marketing blunder. The problem was that the executives at Ford had not taken into consideration what the American public wanted: They designed and built a car based on what they thought was a good idea. In some ways, these executives were using too much of an etic perspective. In my case, I came up with an idea for a topic. Before developing a theoretical model of the CPAs role in assessing quality in higher education, this qualitative project allowed me to explore the potential for this topic. It afforded me the opportunity to do what Ford Motor Company failed to do: I was able to take a closer look at the feasibility of this topic. Based on the findings of the study, it appears as though the proposed topic has some merit. This is only a tentative conclusion, however, and further research is needed to determine whether the topic should be continued, modified, or abandoned.

# APPENDIX B

## REVISED COVER LETTER AND SURVEY QUESTIONNAIRE

REVISED COVER LETTER FOR INITIAL MAILING

«Inside Address»

Dear «FirstName»:

Certified Public Accountants (CPAs) have traditionally offered services to their clients that are primarily financial in nature. The scope of services offered by CPAs is starting to extend beyond engagements dealing strictly with financial information. An example of this trend is the use of assurance services, which have been defined as "independent professional services that improve the quality of information, or its context, for decision makers."

CPAs are currently exploring the use of assurance services in areas such as attesting to the quality of care provided for the elderly and providing assurance as to the reliability of information on the Internet. A goal of this study is to gather information relating to the question: Can CPAs, as third-party appraisers, use assurance services to assess the level of non-financial attributes of quality in higher education accounting programs? As a professional involved with the hiring or supervision of accounting graduates, your perceptions of this concept will provide useful data for my study.

Would you please take a few minutes to answer the questions on the following pages and return your responses in the enclosed self-addressed envelope? Participation in this study is voluntary, and there are no risks associated with responding to the survey. A summary of the results will be provided upon request.

Please return the forms by October 20, 2000. Your responses will be held in strict confidence. Should you have any questions regarding this study, please contact me at the addresses indicated below.

If you would like to obtain summary results of the findings of this study, please check the appropriate item on the last page of the forms. Thank you for your assistance with my research.

Sincerely,

Thomas F. Brubaker
CPA and Doctoral Candidate in Higher Education

Address: P.O. Box 305219
Denton, TX 76203-5219
Phone Numbers: Office (940) 565-3098
Home (817) 838-9445
e-mail: brubaker@cobaf.unt.edu

**This study has been approved by the Institutional Review Board of the University of North Texas, (940) 565-3940**

REVISED SURVEY USED IN INITIAL MAILING AND FOLLOW UP MAILING

# QUALITY ASSESSMENT IN HIGHER EDUCATION ACCOUNTING PROGRAMS USING ASSURANCE SERVICES OF CPAS

## PART I: BACKGROUND

1. Please check the category that best describes your current status:

_____ Partner, Public Accounting Firm
_____ Manager, Public Accounting Firm
_____ Other Public Accounting position
_____ Manager of Human Resources
_____ Supervisor or manager of accounting staff
_____ Other (please indicate your position) _____

CPAs provide a wide range of services to the public. Items 2 through 7 describe some of the common services performed by CPAs.

Please indicate your level of familiarity with the following types of services performed by circling one of the numbers (1 through 5, as described below) to indicate the extent to which you agree are familiar with each of the services (items 2 through 7) performed by CPAs:

1 = Not at all familiar
2 = Slightly familiar
3 = Somewhat familiar
4 = Fairly familiar
5 = Very familiar

| **Services Performed by CPAs:** | ***PLEASE CIRCLE YOUR RESPONSE BELOW:*** | | | | |
|---|---|---|---|---|---|
| 2. Tax services – Individual | 1 | 2 | 3 | 4 | 5 |
| 3. Tax services- Profit oriented businesses | 1 | 2 | 3 | 4 | 5 |
| 4. Financial Planning | 1 | 2 | 3 | 4 | 5 |
| 5. Financial Reporting (Financial audits) | 1 | 2 | 3 | 4 | 5 |
| 6. Operational Audits | 1 | 2 | 3 | 4 | 5 |
| 7. Assurance services | 1 | 2 | 3 | 4 | 5 |

PART II: VARIABLES USED TO MEASURE QUALITY IN ACCOUNTING PROGRAMS

Some quality attributes in higher education accounting programs can be assessed by measuring certain variables. The variables are assumed to be valid indicators of various quality attributes. While there are many variables that could be selected for assessing quality, only a few are identified for purposes of this study.

Listed below are some commonly used examples of quality attributes relating to accounting programs. Next to each quality attribute are several variables commonly used to assess the indicated quality attribute.

Please circle one of the numbers (1 through 5, as described below) to indicate the extent to which you agree or disagree with the following statement:

***"The indicated variable is a valid indicator of the quality attribute for accounting programs" (items 8 through 23)***

**1 = Strongly disagree with the statement**
**2 = Disagree with the statement**
**3 = Undecided or not sure**
**4 = Agree with the statement**
**5 = Strongly agree with the statement**

| **Quality attribute:** | **Variables used to measure quality attribute:** | ***PLEASE CIRCLE YOUR RESPONSE BELOW:*** |
|---|---|---|
| *Quality of Accounting Program Admission Standards Relating to Incoming Students* | 8. Average SAT Scores | 1 2 3 4 5 |
| | 9. Acceptance Rate | 1 2 3 4 5 |
| | 10. Diversity | 1 2 3 4 5 |
| | 11. Average GPA | 1 2 3 4 5 |
| *Quality of Teaching* | 17. Student evaluations of faculty | 1 2 3 4 5 |
| | 18. Peer evaluations of faculty | 1 2 3 4 5 |
| | 14. Faculty-to-Student ratios | 1 2 3 4 5 |
| Quality of Faculty Research | 15. Number of faculty publications | 1 2 3 4 5 |
| | 16 Types of faculty publications | 1 2 3 4 5 |
| | 17. Number of faculty research grants | 1 2 3 4 5 |
| | 18. Types of faculty research grants | 1 2 3 4 5 |
| Quality of Faculty Service | 19. Committee assignments | 1 2 3 4 5 |
| | 20. Participation in conferences, seminars, and workshops | 1 2 3 4 5 |
| Quality of Accounting Graduates | 21. Admission rates into graduate and professional programs | 1 2 3 4 5 |
| | 22. Ranges of salary offerings | 1 2 3 4 5 |
| | 23. Placement information | 1 2 3 4 5 |

PART III: CURRENT METHODS OF MEASURING AND REPORTING QUALITY ATTRIBUTES OF HIGHER EDUCATION ACCOUNTING PROGRAMS

In Part II, several quality attributes and their corresponding measurement variables were identified. In your opinion, how effective is each of the following methods at assessing overall quality of accounting programs at colleges and universities?

Please circle one of the numbers (1 through 5, as described below) to indicate the extent to which you believe each of the indicated assessment methods (24 through 28) is effective in assessing the quality of accounting programs at higher education institutions:

**1 = Not at all effective**
**2 = Slightly effective**
**3 = Somewhat effective**
**4 = Fairly effective**
**5 = Highly effective**

| **Current methods of quality assessment in higher education accounting programs:** | ***PLEASE CIRCLE YOUR RESPONSE BELOW:*** |
|---|---|
| 24. Rankings of colleges and universities in popular magazines (such as U.S. News & World Reports) | 1 2 3 4 5 |
| 25. Handbooks and guides containing descriptive and comparative data on colleges and universities (such as Lovejoy's College Guide) | 1 2 3 4 5 |
| 26. Accreditation processes for assessing higher education accounting programs (such as AACSB or ACBSP) | 1 2 3 4 5 |
| 27. Regulation through a governmental entity (such as coordinating boards) | 1 2 3 4 5 |
| 28. Perceptions of employers who conduct recruiting and hire accounting graduates (for example, preference of hiring accounting graduates from certain schools based on anecdotal experiences) | 1 2 3 4 5 |

PART IV: PERCEPTIONS OF THE POTENTIAL USE OF ASSURANCE SERVICES PERFORMED BY CPAs TO ASSESS QUALITY IN ACCOUNTING PROGRAMS

This part of the survey involves obtaining your perceptions of the potential role of using assurance services performed by CPA to assess quality in higher education accounting programs. Assurance services are defined as "independent professional services that improve the quality of information, or its context, for decision makers."

Each of the following statements relates to how you perceive the role of CPAs in providing assurance services to assess quality in higher education accounting programs.

Please circle one of the numbers (1 through 5, as described below) to indicate the extent to which you agree or disagree with the following statements.

**1 = Strongly disagree with the statement**
**2 = Disagree with the statement**
**3 = Undecided or not sure**
**4 = Agree with the statement**
**5 = Strongly agree with the statement**

| **Perceptions of assurance services performed by CPAs to assess quality in accounting programs:** | ***PLEASE CIRCLE YOUR RESPONSE BELOW:*** |
|---|---|
| 29. CPAs could expand their current range of services to include assessing quality attributes of higher education accounting programs. | 1 2 3 4 5 |
| 30. Compared to some of the assessment methods currently in use (as described in Part III), assurance services performed by CPAs would add value to the assessment processes for accounting programs. | 1 2 3 4 5 |
| 31. CPAs could serve as consultants to accounting educators and employers in developing uniform standards of quality in accounting programs | 1 2 3 4 5 |
| *(CONTINUED ON NEXT PAGE)* | |

PART IV ***(continued from previous page)***

Please circle one of the numbers (1 through 5, as described below) to indicate the extent to which you agree or disagree with the following statements.

**1 = Strongly disagree with the statement**
**2 = Disagree with the statement**
**3 = Undecided or not sure**
**4 = Agree with the statement**
**5 = Strongly agree with the statement**

| **Perceptions of assurance services performed by CPAs to assess quality in accounting programs:** ***(continued from previous page)*** | ***PLEASE CIRCLE YOUR RESPONSE BELOW:*** |
|---|---|
| 32. New forms of assessing accounting programs, such as assurance services could replace current methods of assessment (such as those described in Part III) | **1 2 3 4 5** |
| 33. CPAs performing assurance services would be highly independent from the institutions whose accounting programs they are assessing. Therefore, the information obtained would be more objective and less subject to bias than other methods of assessment | **1 2 3 4 5** |
| 34. The level of knowledge, skills and expertise CPAs possess in the area of financial reporting could be extended to nonfinancial aspects of measuring quality in higher education accounting programs | **1 2 3 4 5** |
| 35. Assurance services performed by CPAs should complement, but not replace, current methods of assessing quality | **1 2 3 4 5** |
| 36. Assurance services performed by CPAs could provide an alternative to accreditation for institutions with small accounting programs and limited resources | **1 2 3 4 5** |
| 37. Assurance services could potentially offer an assessment method superior to assessment methods currently in use | |

**PART V: SURVEY RESULTS (OPTIONAL)**

The objective of this study is to examine the perceived feasibility of using assurance services performed by CPAs to assess of the quality of higher education accounting programs. If you are interested in obtaining summary results of the study, please complete the information below:

**NAME: _____**

**TITLE: _____**

**ORGANIZATION _____**

ADDRESS: _____

CITY & STATE: _____

## Thank you for your assistance!

# APPENDIX C

## APPROVAL FORMS FROM THE UNIVERSITY OF NORTH TEXAS INSTITUTIONAL REVIEW BOARD TO CONDUCT RESEARCH INVOLVING HUMAN SUBJECTS

UNIVERSITY of NORTH TEXAS

*Office of Research Services*

May 12, 2000

Thomas F. Brubaker
1214 Clarence
Fort Worth, TX 76117

RE: Human Subjects Application No. 00-100

Dear Mr. Brubaker,

Your proposal titled "Perceptions of Assurance Services Performed by Certified Public Accountants: Accounting Education Assessment Applications," has been approved by the Institutional Review Board and is exempt from further review under 45 CFR 46.101.

Enclosed is the consent document with stamped IRB approval. Please copy and **use this form only** for your study subjects.

The UNT IRB must re-review this project prior to any modifications you make in the approved project. Please contact me if you wish to make such changes or need additional information.

Sincerely,

Reata Busby, Chair
Institutional Review Board

RB:sb

P.O. Box 305250 • Denton, Texas 76203-5250 • (940) 565-3940
Fax (940) 565-4277 • TDD (800) 735-2989 • www.unt.edu

## SURVEY:

**QUALITY ASSESSMENT IN HIGHER EDUCATION ACCOUNTING PROGRAMS: THE ROLE OF ASSURANCE SERVICES PERFORMED BY CERTIFIED PUBLIC ACCOUNTANTS**

Certified Public Accountants (CPAs) have traditionally offered services which are primarily financial in nature to their clients. Financial audits, tax services, and consulting engagements have been the domain of CPAs in the past.

The scope of services offered by CPAs is starting to expand beyond engagements dealing strictly with financial information. The American Institute of Certified Public Accountants (AICPA) has identified a new type of engagement, known as assurance services, in which CPAs can utilize their expertise and training in areas outside the sphere of financial information. The AICPA has defined assurance services as "independent professional services that improve the quality of information, or its context, for decision makers."

CPAs are currently exploring the use of assurance services in areas such as attesting to the quality of care provided for the elderly and providing assurance as to the reliability of information on the Internet. Applications of assurance services to quality assessment in higher education have not yet been explored in much depth.

Can CPAs assume the role of independent third-party appraisers and assess the level of non-financial attributes of quality in higher education accounting programs through the use of assurance services? The goal of this study is to understand the perceptions among higher education administrators, faculty, CPAs and other users of quality assessment information regarding the potential use of assurance services to assess quality in higher education accounting programs.

I am very interested in obtaining your insights in this area. Would you please take a few minutes to answer the questions on the following pages and return your responses in the enclosed self-addressed envelope? Participation in this study is voluntary, and there are no risks associated with responding to the survey.

Please return the forms by June 30, 2000. Your responses will be held in strict confidence. Should you have any questions regarding this study, please contact me at the address, e-mail, or phone numbers indicated.

If you would like to obtain summary results of the findings of this study, please check the appropriate item on the last page of the forms. Thank you for your assistance with my research.

Sincerely,

Thomas F. Brubaker
Doctoral Candidate in Higher Education
University of North Texas

Address: P.O. Box 305219
Denton, TX 76203-5219
Phone Numbers: Office (940) 565-3098
Home (817) 838-9445
e-mail: brubaker@cobaf.unt.edu

**APPROVED BY THE UNT IRB**
**FROM** 05/12/00 **TO** 05/11/01

# APPENDIX D

## FOLLOW-UP SURVEY COVER LETTER

## APPENDIX D: FOLLOW-UP SURVEY COVER LETTER

«FirstName» «LastName»
«Company»
«Address1»
«City», «State» «PostalCode»

Dear «Title»:

I recently mailed you a questionnaire for the study I am conducting relating to the potential use of assurance services in higher education accounting programs. I am following up on the first mailing. The survey takes less than five minutes to complete. Would you please complete the survey and return it in the enclosed stamped, self-addressed envelope? Your responses will provide valuable data for improving the assessment of higher education accounting programs in Texas. If you have already responded, please disregard this letter.

Please contact me at the addresses indicated below if you have any questions regarding my study. If you would like to obtain summary results of the findings of this study, please check the appropriate item on the last page of the survey. Thank you for your assistance with my research.

Sincerely,

Thomas F. Brubaker
Accounting Programs Coordinator
CPA and Doctoral Candidate in Higher Education

Address: P.O. Box 305219
Denton, TX 76203-5219

Phone Numbers: Office (940) 565-3098
Home (817) 838-9445

e-mail: brubaker@cobaf.unt.edu

This study has been approved by the Institutional Review Board of the University of North Texas, (940) 565-3940

# APPENDIX E

## COMPARISON OF INTITIAL MAILING RESPONSES TO FOLLOW- UP RESPONSES: SUMMARY RESULTS OF INDEPENDENT SAMPLES T-TEST

Results of Independent Samples t-test: Initial mailing compared to Follow-up mailing

| Item Number on Survey Questionnaire | Means | | Standard Deviations | | t-test for Equality of Means[b] | |
|---|---|---|---|---|---|---|
| | Initial mailing[a] | Follow-up mailing[a] | Initial mailing | Follow-up mailing | t | Significance |
| 1 | 4.24 | 4.57 | 2.07 | 1.86 | -.796 | .428 |
| 2 | 4.24 | 3.91 | 1.18 | 1.38 | 1.219 | .226 |
| 3 | 4.13 | 3.93 | 1.31 | 1.31 | .717 | .475 |
| 4 | 3.46 | 3.50 | 1.28 | 1.30 | -.162 | .872 |
| 5 | 4.15 | 4.15 | 1.19 | .99 | .0 | 1.000 |
| 6 | 3.15 | 3.39 | 1.30 | 1.20 | -.917 | .362 |
| 7 | 3.24 | 3.35 | 1.23 | 1.37 | -.400 | .690 |
| 8 | 3.54 | 3.72 | 1.00 | .86 | -.892 | .375 |
| 9 | 3.11 | 3.24 | .99 | .85 | -.677 | .500 |
| 10 | 2.80 | 2.89 | 1.17 | .85 | -.409 | .684 |
| 11 | 3.89 | 4.09 | .97 | .63 | -1.148 | .254 |
| 12 | 3.93 | 3.76 | 1.00 | 1.02 | .829 | .409 |
| 13 | 3.89 | 3.74 | .90 | .68 | .914 | .363 |
| 14 | 4.17 | 3.96 | .82 | .89 | 1.213 | .228 |
| 15 | 3.13 | 3.20 | 1.15 | .91 | -.302 | .763 |
| 16 | 3.54 | 3.54 | 1.09 | .96 | .000 | 1.000 |
| 17 | 3.41 | 3.28 | 1.02 | .89 | .653 | .515 |
| 18 | 3.63 | 3.43 | 1.00 | .91 | .983 | .328 |
| 19 | 3.35 | 3.11 | .95 | .80 | 1.311 | .193 |
| 20 | 4.00 | 3.85 | .97 | .79 | .828 | .410 |
| 21 | 4.04 | 4.02 | .73 | .77 | .139 | .890 |
| 22 | 3.80 | 3.91 | 1.05 | .86 | -.543 | .588 |
| 23 | 4.15 | 4.00 | .63 | .82 | 1.000 | .320 |
| 24 | 3.20 | 3.43 | 1.13 | .78 | -1.183 | .240 |
| 25 | 3.37 | 3.33 | .90 | .76 | .250 | .803 |
| 26 | 4.02 | 3.80 | .71 | .86 | 1.319 | .190 |
| 27 | 2.96 | 2.87 | .99 | .91 | .439 | .662 |
| 28 | 4.35 | 4.26 | .92 | .74 | .497 | .620 |
| 29 | 3.41 | 3.41 | .96 | 1.00 | .000 | 1.000 |
| 30 | 3.65 | 3.33 | .90 | .99 | 1.653 | .102 |
| 31 | 4.20 | 4.09 | .75 | .76 | .653 | .490 |
| 32 | 3.13 | 3.02 | .78 | 1.00 | .582 | .562 |
| 33 | 3.46 | 3.63 | .86 | 1.08 | .534 | .595 |
| 34 | 3.63 | 3.65 | .95 | .85 | -.116 | .908 |
| 35 | 4.00 | 4.04 | .52 | .84 | -.299 | .766 |
| 36 | 3.33 | 3.20 | 1.08 | 1.05 | .589 | .557 |
| 37 | 3.33 | 3.20 | .90 | .83 | .723 | .471 |

Notes. [a] n = 46 for each group

[b] *p<.05, two-tailed test

# APPENDIX F

# RESPONDENTS' FAMILIARITY WITH SERVICES PERFORMED BY CERTIFIED PUBLIC ACCOUNTANTS

Respondents' familiarity with services performed by CPAs

| Items 2 through 7<br><br>Respondents' familiarity with: | Frequency of responses for Items 1 through 7 | | | | | | | | | | Descriptive Statistics | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1= Not all familiar | | 2 = Slightly familiar | | 3 = Somewhat familiar | | 4= Fairly familiar | | 5= Very familiar | | | | |
| | N[a] | % of total for this item | N | % of total for this item | N | % of total for this item | N | % of total for this item | N | % of total for this item | Mean | Median | Standard deviation |
| 2. Tax services individual | 5 | 5.4 | 11 | 12.0 | 9 | 9.8 | 14 | 15.2 | 53 | 57.6 | 4.08 | 5 | 1.29 |
| 3. Tax services – Profit oriented Businesses | 5 | 5.4 | 11 | 12.0 | 13 | 14.1 | 10 | 10.9 | 53 | 57.6 | 4.03 | 5 | 1.30 |
| 4. Financial Planning | 8 | 8.7 | 12 | 13.0 | 27 | 29.3 | 18 | 19.6 | 27 | 29.3 | 3.48 | 3 | 1.28 |
| 5. Financial Reporting (Financial audits) | 3 | 3.3 | 6 | 6.5 | 12 | 13.0 | 24 | 26.1 | 47 | 51.1 | 4.15 | 5 | 1.09 |
| 6. Operational Audits | 12 | 13.3 | 10 | 10.9 | 27 | 29.3 | 27 | 29.3 | 16 | 17.4 | 3.27 | 3 | 1.25 |
| 7. Assurance services | 7 | 7.6 | 23 | 25.0 | 21 | 22.8 | 18 | 19.6 | 23 | 25.0 | 3.29 | 3 | 1.30 |
| Totals for each Response category [b] | 40 | 7.2 | 73 | 13.2 | 109 | 19.7 | 111 | 20.1 | 219 | 39.8 | | | |

Notes [a] Total sample size = 92

[b] Totals and percentages based on 552 responses (92 respondents x 6 responses each)

# APPENDIX G

## PERCEPTIONS OF VARIABLES COMMONLY USED TO MEASURE QUALITY ATTRIBUTES IN ACCOUNTING PROGRAMS: DESCRIPTIVE STATISTICS

Perceptions of Variables Commonly Used to Measure Quality Attributes in Accounting Programs: Descriptive Statistics

| Variables used to measure quality attribute, ranked in order of mean response | Rank | Mean Response | Minimum | Maximum | Standard Deviation | Median | Frequencies of responses to the statement: "The indicated variable is a valid indicator of the quality attribute for accounting programs" Responses: 1= strongly disagree | 2= disagree | 3= undecided or not sure | 4= agree | 5= strongly agree |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 23. Placement information | 1 | 4.08 | 2 | 5 | .73 | 4.00 | - | 1 | 18 | 46 | 27 |
| 14. Faculty-to-Student ratios | 2 | 4.07 | 2 | 5 | .86 | 4.00 | - | 6 | 13 | 42 | 31 |
| 21. Admission rates into graduate and professional programs | 3 | 4.03 | 2 | 5 | .75 | 4.00 | - | 5 | 9 | 56 | 22 |
| 11. Average GPA | 4 | 3.99 | 1 | 5 | .82 | 4.00 | 3 | 2 | 7 | 61 | 19 |
| 20. Participation in conferences, seminars, and workshops | 5 | 3.92 | 1 | 5 | .88 | 4.00 | 1 | 5 | 18 | 44 | 24 |
| 22. Ranges of salary offerings | 6 | 3.86 | 1 | 5 | .96 | 4.00 | 1 | 10 | 13 | 45 | 23 |
| 12. Student evaluations of faculty | 7 | 3.85 | 1 | 5 | 1.00 | 4.00 | 2 | 9 | 15 | 41 | 25 |
| 13. Peer evaluations of faculty | 8 | 3.82 | 2 | 5 | .80 | 4.00 | 0 | 8 | 15 | 55 | 14 |
| 8. Average SAT Scores | 9 | 3.63 | 1 | 5 | .93 | 4.00 | 3 | 11 | 12 | 57 | 9 |
| 16. Types of faculty publications | 10 | 3.54 | 1 | 5 | 1.02 | 4.00 | 4 | 10 | 24 | 40 | 14 |
| 18. Types of faculty research grants | 11 | 3.53 | 1 | 5 | .95 | 4.00 | 4 | 4 | 37 | 33 | 14 |
| 17. Number of faculty research grants | 12 | 3.35 | 1 | 5 | .95 | 3.00 | 5 | 9 | 34 | 37 | 7 |
| 19. Committee assignments | 13 | 3.23 | 1 | 5 | .88 | 3.00 | 1 | 17 | 41 | 26 | 7 |
| 9. Acceptance Rate | 14 | 3.17 | 1 | 5 | .92 | 3.00 | 5 | 13 | 39 | 31 | 4 |
| 15. Number of faculty publications | 15 | 3.16 | 1 | 5 | 1.03 | 3.00 | 8 | 14 | 29 | 37 | 4 |
| 10. Diversity | 16 | 2.85 | 1 | 5 | 1.02 | 3.00 | 9 | 23 | 38 | 17 | 5 |
| Grand mean (mean of mean responses) | | | Frequency of responses | | | | 46 | 147 | 362 | 668 | 249 |
| | | Percentage of total responses | | | | | 3.1% | 10.0% | 24.6% | 45.4% | 16.9% |

APPENDIX H

CORRELATION MATRIX: PARTII OF SURVEY QUESTIONNAIRE

(SURVEY RESPONSE ITEMS 8 THROUGH 23)

| Spearman's rho | | Item 8 | Item 9 | Item 10 | Item 11 | Item 12 |
|---|---|---|---|---|---|---|
| Item 8 | Correlation Coefficient | 1.000 | *230 | -083 | **464 | 117 |
| | Sig. (2-tailed) | | 028 | 433 | 000 | 267 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 9 | Correlation Coefficient | *230 | 1.000 | **301 | **371 | 190 |
| | Sig. (2-tailed) | 028 | | 004 | 000 | 070 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 10 | Correlation Coefficient | -083 | **301 | 1.000 | 069 | 202 |
| | Sig. (2-tailed) | 433 | 004 | | 510 | 054 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 11 | Correlation Coefficient | **464 | **371 | 069 | 1.000 | 178 |
| | Sig. (2-tailed) | 000 | 000 | 510 | | 090 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 12 | Correlation Coefficient | 117 | 190 | 202 | 178 | 1.000 |
| | Sig. (2-tailed) | 267 | 070 | 054 | 090 | |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 13 | Correlation Coefficient | **277 | **338 | 156 | *251 | **419 |
| | Sig. (2-tailed) | 008 | 001 | 137 | 016 | 000 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 14 | Correlation Coefficient | 009 | *216 | 123 | 183 | **274 |
| | Sig. (2-tailed) | 935 | 038 | 243 | 081 | 008 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 15 | Correlation Coefficient | **270 | **328 | 167 | 119 | 070 |
| | Sig. (2-tailed) | 009 | 001 | 111 | 257 | 510 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 16 | Correlation Coefficient | 082 | 086 | -034 | 065 | 045 |
| | Sig. (2-tailed) | 435 | 418 | 745 | 537 | 673 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 17 | Correlation Coefficient | *214 | *217 | 107 | 107 | 075 |
| | Sig. (2-tailed) | 040 | 038 | 312 | 310 | 479 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 18 | Correlation Coefficient | 075 | -033 | 013 | 041 | 008 |
| | Sig. (2-tailed) | 478 | 756 | 902 | 699 | 939 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 19 | Correlation Coefficient | 089 | 111 | 127 | 063 | 004 |
| | Sig. (2-tailed) | 400 | 293 | 229 | 549 | 967 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 20 | Correlation Coefficient | 076 | 112 | 048 | 163 | 196 |
| | Sig. (2-tailed) | 471 | 286 | 647 | 120 | 061 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 21 | Correlation Coefficient | **377 | **304 | -055 | **354 | **274 |
| | Sig. (2-tailed) | 000 | 003 | 604 | 001 | 008 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 22 | Correlation Coefficient | 198 | **356 | 197 | 186 | 170 |
| | Sig. (2-tailed) | 058 | 000 | 060 | 076 | 105 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 23 | Correlation Coefficient | *213 | *207 | 049 | *218 | **294 |
| | Sig. (2-tailed) | 042 | 048 | 645 | 037 | 004 |
| | N | 92 | 92 | 92 | 92 | 92 |

* Correlation is significant at the .05 level (2-tailed).

** Correlation is significant at the .01 level (2-tailed).

| Spearman's rho | | Item 13 | Item 14 | Item 15 | Item 16 | Item 17 |
|---|---|---|---|---|---|---|
| Item 8 | Correlation Coefficient | **277 | 009 | **270 | 082 | *214 |
| | Sig. (2-tailed) | 008 | 935 | 009 | 435 | 040 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 9 | Correlation Coefficient | **338 | *216 | **328 | 086 | *217 |
| | Sig. (2-tailed) | 001 | 038 | 001 | 418 | 038 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 10 | Correlation Coefficient | 156 | 123 | 167 | -034 | 107 |
| | Sig. (2-tailed) | 137 | 243 | 111 | 745 | 312 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 11 | Correlation Coefficient | *251 | 183 | 119 | 065 | 107 |
| | Sig. (2-tailed) | 016 | 081 | 257 | 537 | 310 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 12 | Correlation Coefficient | **419 | **274 | 070 | 045 | 075 |
| | Sig. (2-tailed) | 000 | 008 | 510 | 673 | 479 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 13 | Correlation Coefficient | 1.000 | **330 | 020 | 033 | 052 |
| | Sig. (2-tailed) | | 001 | 847 | 754 | 624 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 14 | Correlation Coefficient | **330 | 1.000 | **300 | *243 | **335 |
| | Sig. (2-tailed) | 001 | | 004 | 020 | 001 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 15 | Correlation Coefficient | 020 | **300 | 1.000 | **617 | **690 |
| | Sig. (2-tailed) | 847 | 004 | | 000 | 000 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 16 | Correlation Coefficient | 033 | *243 | **617 | 1.000 | **555 |
| | Sig. (2-tailed) | 754 | 020 | 000 | | 000 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 17 | Correlation Coefficient | 052 | **335 | **690 | **555 | 1.000 |
| | Sig. (2-tailed) | 624 | 001 | 000 | 000 | |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 18 | Correlation Coefficient | 002 | **303 | **304 | **616 | **620 |
| | Sig. (2-tailed) | 985 | 003 | 003 | 000 | 000 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 19 | Correlation Coefficient | 095 | **303 | **412 | **418 | **321 |
| | Sig. (2-tailed) | 369 | 003 | 000 | 000 | 002 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 20 | Correlation Coefficient | *255 | **388 | 265 | **285 | 181 |
| | Sig. (2-tailed) | 014 | 000 | 011 | 006 | 085 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 21 | Correlation Coefficient | 167 | **301 | **360 | *260 | **320 |
| | Sig. (2-tailed) | 112 | 004 | 000 | 012 | 002 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 22 | Correlation Coefficient | **299 | 184 | **385 | *257 | **398 |
| | Sig. (2-tailed) | 004 | 080 | 000 | 013 | 000 |
| | N | 92 | 92 | 92 | 92 | 92 |
| Item 23 | Correlation Coefficient | **399 | **354 | 153 | 172 | **274 |
| | Sig. (2-tailed) | 000 | 001 | 145 | 101 | 008 |
| | N | 92 | 92 | 92 | 92 | 92 |

* Correlation is significant at the .05 level (2-tailed).

** Correlation is significant at the .01 level (2-tailed).

| Spearman's rho | | Item 18 | Item 19 | Item 20 | Item 21 |
|---|---|---|---|---|---|
| Item 8 | Correlation Coefficient | 075 | 089 | 076 | **377 |
| | Sig. (2-tailed) | 478 | 400 | 471 | 000 |
| | N | 92 | 92 | 92 | 92 |
| Item 9 | Correlation Coefficient | -033 | 111 | 112 | **304 |
| | Sig. (2-tailed) | 756 | 293 | 286 | 003 |
| | N | 92 | 92 | 92 | 92 |
| Item 10 | Correlation Coefficient | 013 | 127 | 048 | -055 |
| | Sig. (2-tailed) | 902 | 229 | 647 | 604 |
| | N | 92 | 92 | 92 | 92 |
| Item 11 | Correlation Coefficient | 041 | 063 | 163 | **354 |
| | Sig. (2-tailed) | 699 | 549 | 120 | 001 |
| | N | 92 | 92 | 92 | 92 |
| Item 12 | Correlation Coefficient | 008 | 004 | 196 | **274 |
| | Sig. (2-tailed) | 939 | 967 | 061 | 008 |
| | N | 92 | 92 | 92 | 92 |
| Item 13 | Correlation Coefficient | 002 | 095 | *255 | 167 |
| | Sig. (2-tailed) | 985 | 369 | 014 | 112 |
| | N | 92 | 92 | 92 | 92 |
| Item 14 | Correlation Coefficient | **303 | **303 | **388 | **301 |
| | Sig. (2-tailed) | 003 | 003 | 000 | 004 |
| | N | 92 | 92 | 92 | 92 |
| Item 15 | Correlation Coefficient | **304 | **412 | *265 | **360 |
| | Sig. (2-tailed) | 003 | 000 | 011 | 000 |
| | N | 92 | 92 | 92 | 92 |
| Item 16 | Correlation Coefficient | **616 | **418 | **285 | *260 |
| | Sig. (2-tailed) | 000 | 000 | 006 | 012 |
| | N | 92 | 92 | 92 | 92 |
| Item 17 | Correlation Coefficient | **620 | **321 | 181 | **320 |
| | Sig. (2-tailed) | 000 | 002 | 085 | 002 |
| | N | 92 | 92 | 92 | 92 |
| Item 18 | Correlation Coefficient | 1.000 | **353 | 127 | *238 |
| | Sig. (2-tailed) | | 001 | 229 | 023 |
| | N | 92 | 92 | 92 | 92 |
| Item 19 | Correlation Coefficient | **353 | 1.000 | **445 | *262 |
| | Sig. (2-tailed) | 001 | | 000 | 012 |
| | N | 92 | 92 | 92 | 92 |
| Item 20 | Correlation Coefficient | 127 | **445 | 1.000 | 058 |
| | Sig. (2-tailed) | 229 | 000 | | 581 |
| | N | 92 | 92 | 92 | 92 |
| Item 21 | Correlation Coefficient | *238 | *262 | 058 | 1.000 |
| | Sig. (2-tailed) | 023 | 012 | 581 | |
| | N | 92 | 92 | 92 | 92 |
| Item 22 | Correlation Coefficient | 157 | 045 | 098 | **390 |
| | Sig. (2-tailed) | 135 | 668 | 354 | 000 |
| | N | 92 | 92 | 92 | 92 |
| Item 23 | Correlation Coefficient | 157 | 164 | *217 | **379 |
| | Sig. (2-tailed) | 134 | 119 | 038 | 000 |
| | N | 92 | 92 | 92` | 92 |

* Correlation is significant at the .05 level (2-tailed).

** Correlation is significant at the .01 level (2-tailed).

| Spearman's rho | | Item 22 | Item 23 |
|---|---|---|---|
| Item 8 | Correlation Coefficient | 198 | *213 |
| | Sig. (2-tailed) | 058 | 042 |
| | N | 92 | 92 |
| Item 9 | Correlation Coefficient | **356 | *207 |
| | Sig. (2-tailed) | 000 | 048 |
| | N | 92 | 92 |
| Item 10 | Correlation Coefficient | 197 | 049 |
| | Sig. (2-tailed) | 060 | 645 |
| | N | 92 | 92 |
| Item 11 | Correlation Coefficient | 186 | *218 |
| | Sig. (2-tailed) | 076 | 037 |
| | N | 92 | 92 |
| Item 12 | Correlation Coefficient | 170 | **294 |
| | Sig. (2-tailed) | 105 | 004 |
| | N | 92 | 92 |
| Item 13 | Correlation Coefficient | **299 | **399 |
| | Sig. (2-tailed) | 004 | 000 |
| | N | 92 | 92 |
| Item 14 | Correlation Coefficient | 184 | **354 |
| | Sig. (2-tailed) | 080 | 001 |
| | N | 92 | 92 |
| Item 15 | Correlation Coefficient | **385 | 153 |
| | Sig. (2-tailed) | 000 | 145 |
| | N | 92 | 92 |
| Item 16 | Correlation Coefficient | *257 | 172 |
| | Sig. (2-tailed) | 013 | 101 |
| | N | 92 | 92 |
| Item 17 | Correlation Coefficient | **398 | **274 |
| | Sig. (2-tailed) | 000 | 008 |
| | N | 92 | 92 |
| Item 18 | Correlation Coefficient | 157 | 157 |
| | Sig. (2-tailed) | 135 | 134 |
| | N | 92 | 92 |
| Item 19 | Correlation Coefficient | 045 | 164 |
| | Sig. (2-tailed) | 668 | 119 |
| | N | 92 | 92 |
| Item 20 | Correlation Coefficient | 098 | *217 |
| | Sig. (2-tailed) | 354 | 038 |
| | N | 92 | 92 |
| Item 21 | Correlation Coefficient | **390 | **379 |
| | Sig. (2-tailed) | 000 | 000 |
| | N | 92 | 92 |
| Item 22 | Correlation Coefficient | 1.000 | **563 |
| | Sig. (2-tailed) | | 000 |
| | N | 92 | 92 |
| Item 23 | Correlation Coefficient | **563 | 1.000 |
| | Sig. (2-tailed) | 000 | |
| | N | 92 | 92 |

* Correlation is significant at the .05 level (2-tailed).

** Correlation is significant at the .01 level (2-tailed).

# APPENDIX I

## RESPONSES FOR VARIABLES MEASURING THE QUALITY OF ACCOUNTING PROGRAM ADMISSIONS STANDARDS RELATING TO INCOMING STUDENTS (SURVEY RESPONSE ITEMS 8 THROUGH 11)

Results of paired samples t-tests: Comparison of mean responses for variables measuring the quality of accounting program admission standards relating to incoming students (items 8 through 11)[a]

| | | Item 8: Average SAT Scores | | Item 9: Acceptance Rate | | Item 10: Diversity | | Item 11: Average GPA | |
|---|---|---|---|---|---|---|---|---|---|
| | | t | Significance | t | Significance | t | Significance | t | Significance |
| Item 8 | T | -- | -- | 4.011 | -- | 5.371 | -- | -3.990 | -- |
| | Significance[b] | -- | -- | -- | .000* | -- | *.000 | -- | *.000 |
| Item 9 | T | 4.011 | -- | -- | -- | 2.728 | -- | -8.334 | -- |
| | Significance | | *.000 | -- | -- | -- | *.008 | -- | *.000 |
| Item 10 | T | 5.371 | -- | 2.728 | -- | -- | -- | -8.421 | -- |
| | Significance | -- | *.000 | -- | *.008 | -- | -- | -- | *.000 |
| Item 11 | T | -3.990 | -- | -8.334 | -- | -8.421 | -- | -- | -- |
| | Significance | -- | *.000 | -- | *.000 | -- | *.000 | -- | -- |

Notes. [a] Total sample size=92
[b] Significance: *p<.05, two-tailed test

# APPENDIX J

## RESULTS OF PAIRED SAMPLES T-TESTS: COMPARISONS OF MEAN RESPONSES FOR VARIABLES MEASURING THE QUALITY OF TEACHING (SURVEY RESPONSE ITEMS 12 THROUGH 14)

Results of paired samples t-tests: Comparison of mean responses for variables measuring the quality of teaching[a]

| | | Item 12: Student evaluations of faculty | | Item 13: Peer evaluations of faculty | | Item 14: Faculty-to-student ratios | |
|---|---|---|---|---|---|---|---|
| | | t | Significance | t | Significance | t | Significance |
| Item 12 | t | -- | -- | .313 | -- | -1.920 | -- |
| | Significance[b] | -- | -- | -- | .755 | -- | .058 |
| Item 13 | t | .313 | -- | -- | -- | -2.505 | -- |
| | Significance | | .755 | -- | -- | -- | *.014 |
| Item 14 | t | -1.920 | -- | -2.505 | -- | -- | -- |
| | Significance | -- | .058 | -- | *.014 | -- | -- |

Notes. [a] Total sample size=92

[b] Significance: *p<.05, two-tailed test

# APPENDIX K

## RESULTS OF PAIRED SAMPLES T-TESTS: COMPARISONS OF MEAN RESPONSES FOR VARIABLES MEASURING THE QUALITY OF FACULTY RESEARCH

## (SURVEY RESPONSE ITEMS 15 THROUGH 18)

Results of paired samples t-tests: Comparison of mean responses for variables measuring the quality of faculty research (items 15 through 18)[a]

| | | Item 15: Number of faculty publications | | Item 16: Types of faculty publications | | Item 17: Number of faculty research grants | | Item 18: Types of faculty research grants | |
|---|---|---|---|---|---|---|---|---|---|
| | | t | Significance | t | Significance | t | Significance | t | Significance |
| Item 15 | t | -- | -- | -4.342 | -- | -2.471 | -- | -3.990 | -- |
| | Significance[b] | -- | -- | -- | .000* | -- | *.015 | -- | *.001 |
| Item 16 | t | -4.342 | -- | -- | -- | 2.220 | -- | .129 | -- |
| | Significance | -- | .000* | -- | -- | -- | *.029 | -- | .898 |
| Item 17 | t | -2.471 | -- | 2.220 | -- | -- | -- | -2.421 | -- |
| | Significance | -- | *.015 | -- | *.029 | -- | -- | -- | *.017 |
| Item 18 | t | -3.990 | -- | .129 | -- | -2.421 | -- | -- | -- |
| | Significance | -- | *.001 | -- | .898 | -- | *.017 | -- | -- |

Notes. [a] Total sample size=92

[b] Significance: *p<.05, two-tailed test

# APPENDIX L

## RESULTS OF PAIRED SAMPLES T-TESTS: COMPARISONS OF MEAN RESPONSES FOR VARIABLES MEASURING THE QUALITY OF FACULTY SERVICE

(SURVEY RESPONSE ITEMS 19 AND 20)

Results of paired samples t-tests: Comparison of mean responses for variables measuring the quality of faculty service[a]

| | | Item 19: Committee assignments | | Item 20: Participation in conferences, seminars, and workshops | |
|---|---|---|---|---|---|
| | | t | Significance | t | Significance |
| Item 19 | t | -- | -- | -7.310 | -- |
| | Significance[b] | -- | -- | -- | *.000 |
| Item 20 | t | -7.310 | -- | -- | -- |
| | Significance | -- | *.000 | -- | -- |

Notes. [a] Total sample size=92

[b] Significance: *p<.05, two-tailed test

# APPENDIX M

## RESULTS OF PAIRED SAMPLES T-TESTS: COMPARISONS OF MEAN RESPONSES FOR VARIABLES MEASURING THE QUALITY OF ACCOUNTING GRADUATES

## (SURVEY RESPONSE ITEMS 21 THROUGH 23)

Results of paired samples t-tests: Comparison of mean responses for variables measuring the quality ofaccounting graduates[a]

| | | Item 21: Admission rates into graduate and professional programs | | Item 22: Ranges of salary offerings | | Item 23: Placement information | |
|---|---|---|---|---|---|---|---|
| | | t | Significance | t | Significance | t | Significance |
| Item 21 | t | -- | -- | 1.649 | -- | -.503 | -- |
| | Significance[b] | -- | -- | -- | .103 | -- | .616 |
| Item 22 | t | 1.649 | -- | -- | -- | -2.482 | -- |
| | Significance | -- | .103 | -- | -- | -- | *.015 |
| Item 23 | t | -.503 | -- | -2.482 | -- | -- | -- |
| | Significance | -- | .616 | -- | *.015 | -- | -- |

Notes. [a] Total sample size=92

[b] Significance: *p<.05, two-tailed test

# APPENDIX N

# PERCEPTIONS OF CERTAIN METHODS CURRENTLY USED TO ASSESS ACCOUNTING EDUCATIPON QUALITY: DESCRIPTIVE STATISTICS

Perceptions of Certain Methods Currently Used to Assess Accounting Education Quality: Descriptive Statistics

| Current method used to assess accounting education quality, ranked in order of mean response | Rank | Mean response | Minimum | Maximum | Standard Deviation | Median | Frequencies of responses to the statement: "The indicated variable is a valid indicator of the quality attribute for accounting programs" Responses: 1= strongly disagree | 2= disagree | 3= undecided or not sure | 4= agree | 5= strongly agree |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 28. Perceptions of employers who conduct recruiting and hire accounting graduates | 1 | 4.30 | 1 | 5 | .84 | 4.00 | 1 | 2 | 10 | 34 | 45 |
| 26. Accreditation processes for assessing higher education accounting programs | 2 | 3.91 | 2 | 5 | .79 | 4.00 | - | 5 | 18 | 49 | 20 |
| 25. Handbooks and guides containing descriptive and comparative data on colleges and universities | 3 | 3.35 | 1 | 5 | .83 | 3.00 | 2 | 11 | 36 | 39 | 4 |
| 24. Rankings of colleges and universities in popular magazines | 4 | 3.32 | 1 | 5 | .97 | 4.00 | 6 | 11 | 27 | 44 | 4 |
| 27. Regulation through a governmental entity | 5 | 2.91 | 1 | 5 | .95 | 3.00 | 7 | 21 | 21 | 21 | 3 |
| Overall mean (grand mean) of responses | | 3.56 | Frequency of responses | | | | 16 | 50 | 131 | 187 | 76 |
| | | Percentage of total responses | | | | | 3.5% | 10.9% | 28.5% | 40.7% | 16.5% |

APPENDIX O

CORRELATION MATRIX: PARTIII OF SURVEY QUESTIONNAIRE

(SURVEY RESPONSE ITEMS 24 THROUGH 28)

**Correlation Matrix: Part 2 of Questionnaire (Items 24-28)**

| | | | Q24 | Q25 | Q26 | Q27 | Q28 |
|---|---|---|---|---|---|---|---|
| Spearman's rho | Q24 | Correlation Coefficient | 1.000 | .438** | -.079 | .082 | .128 |
| | | Sig. (2-tailed) | . | .000 | .457 | .436 | .223 |
| | | N | 92 | 92 | 92 | 92 | 92 |
| | Q25 | Correlation Coefficient | .438** | 1.000 | .141 | .185 | .123 |
| | | Sig. (2-tailed) | .000 | . | .180 | .077 | .241 |
| | | N | 92 | 92 | 92 | 92 | 92 |
| | Q26 | Correlation Coefficient | -.079 | .141 | 1.000 | .273** | .115 |
| | | Sig. (2-tailed) | .457 | .180 | . | .009 | .276 |
| | | N | 92 | 92 | 92 | 92 | 92 |
| | Q27 | Correlation Coefficient | .082 | .185 | .273** | 1.000 | .277** |
| | | Sig. (2-tailed) | .436 | .077 | .009 | . | .007 |
| | | N | 92 | 92 | 92 | 92 | 92 |
| | Q28 | Correlation Coefficient | .128 | .123 | .115 | .277** | 1.000 |
| | | Sig. (2-tailed) | .223 | .241 | .276 | .007 | . |
| | | N | 92 | 92 | 92 | 92 | 92 |

**. Correlation is significant at the .01 level (2-tailed).

# APPENDIX P

## PERCEPTIONS OF THE POTENTIAL USE OF ASSURANCE SERVICES TO ASSESS QUALITY ATTRIBUTES IN ACCOUNTING PROGRAMS: DESCRIPTIVE STATISTICS

Perceptions of the Potential Use of Assurance Services to Assess Quality in Accounting Programs: Descriptive Statistics

| Perceptions of the potential use of assurance services to assess accounting education quality, ranked in order of mean response | Rank | Mean response | Minimum | Maximum | Standard Deviation | Median | Extent to which the respondents agree or disagree with the indicated statements Responses: 1= strongly disagree | 2= disagree | 3= undecided or not sure | 4= agree | 5= strongly agree |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Summary of each item on questionnaire | | | | | | | | | | | |
| 31. CPAs could serve as consultants in setting education standards | 1 | 4.14 | 1 | 5 | .75 | 4.00 | 1 | 1 | 11 | 50 | 29 |
| 35. Assurance services should complement, but not replace, current methods | 2 | 4.02 | 1 | 5 | .70 | 4.00 | 1 | 1 | 12 | 59 | 19 |
| 34. CPAs' financial knowledge could be transferred to educational settings | 3 | 3.64 | 1 | 5 | .90 | 4.00 | 3 | 8 | 17 | 55 | 9 |
| 30. Assurance services would add value to educational assessment | 4 | 3.49 | 1 | 5 | .95 | 4.00 | 3 | 11 | 26 | 42 | 10 |
| 29. CPAs could expand scope of services to include educational assessment | 5 | 3.41 | 1 | 5 | .97 | 3.50 | 4 | 10 | 32 | 36 | 10 |
| 33. CPAs' independence | 6 | 3.40 | 1 | 5 | .97 | 4.00 | 1 | 19 | 24 | 38 | 10 |
| 37. Assurance services are potentially superior to other assessment methods | 7 | 3.26 | 1 | 5 | .86 | 3.00 | 2 | 15 | 36 | 35 | 4 |
| 36. Assurance services could be an alternative to accreditation | 8 | 3.26 | 1 | 5 | 1.06 | 3.00 | 6 | 16 | 26 | 36 | 8 |
| 32. Assurance services could replace current Methods | 9 | 3.08 | 1 | 5 | .89 | 3.00 | 3 | 21 | 37 | 28 | 3 |
| Grand mean (mean of mean responses) | | 3.52 | Frequency of responses | | | | 24 | 102 | 221 | 379 | 102 |
| | | Percentage of total responses | | | | | 2.9% | 12.3% | 26.7% | 45.8% | 12.3% |

APPENDIX Q

CORRELATION MATRIX: PARTIII OF SURVEY QUESTIONNAIRE

(SURVEY RESPONSE ITEMS 29 THROUGH 37)

**Correlations**

| | | | Q29 | Q30 | Q31 | Q32 | Q33 | Q34 | Q35 | Q36 | Q37 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Spearman's rho | Q29 | Correlation Coefficient | 1.000 | .697** | .489** | .324** | .204 | .578** | .387** | .320** | .463** |
| | | Sig. (2-tailed) | . | .000 | .000 | .002 | .052 | .000 | .000 | .002 | .000 |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| | Q30 | Correlation Coefficient | .697** | 1.000 | .466** | .217* | .309** | .495** | .299** | .246* | .439** |
| | | Sig. (2-tailed) | .000 | . | .000 | .038 | .003 | .000 | .004 | .018 | .000 |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| | Q31 | Correlation Coefficient | .489** | .466** | 1.000 | .176 | .196 | .395** | .217* | .210* | .349** |
| | | Sig. (2-tailed) | .000 | .000 | . | .093 | .061 | .000 | .038 | .044 | .001 |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| | Q32 | Correlation Coefficient | .324** | .217* | .176 | 1.000 | .280** | .303** | .002 | .200 | .324** |
| | | Sig. (2-tailed) | .002 | .038 | .093 | . | .007 | .003 | .981 | .056 | .002 |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| | Q33 | Correlation Coefficient | .204 | .309** | .196 | .280** | 1.000 | .350** | .140 | .349** | .455** |
| | | Sig. (2-tailed) | .052 | .003 | .061 | .007 | . | .001 | .183 | .001 | .000 |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| | Q34 | Correlation Coefficient | .578** | .495** | .395** | .303** | .350** | 1.000 | .362** | .364** | .433** |
| | | Sig. (2-tailed) | .000 | .000 | .000 | .003 | .001 | . | .000 | .000 | .000 |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| | Q35 | Correlation Coefficient | .387** | .299** | .217* | .002 | .140 | .362** | 1.000 | .317** | .232* |
| | | Sig. (2-tailed) | .000 | .004 | .038 | .981 | .183 | .000 | . | .002 | .026 |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| | Q36 | Correlation Coefficient | .320** | .246* | .210* | .200 | .349** | .364** | .317** | 1.000 | .492** |
| | | Sig. (2-tailed) | .002 | .018 | .044 | .056 | .001 | .000 | .002 | . | .000 |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| | Q37 | Correlation Coefficient | .463** | .439** | .349** | .324** | .455** | .433** | .232* | .492** | 1.000 |
| | | Sig. (2-tailed) | .000 | .000 | .001 | .002 | .000 | .000 | .026 | .000 | . |
| | | N | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

# APPENDIX R

## THE POTENTIAL USE OF ASSURANCE SERVICES TO ASSESS QUALITY ATTRIBUTES: COMPARISON OF PERCEPTIONS BETWEEN PUBLIC ACCOUNTING AND NON-PUBLIC ACCOUNTING GROUPS USING A ONE-WAY ANOVA

**ANOVA: Perceptions of the potential use of assurance services: Public accounting group compared to non-public accounting group**

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Q29 | Between Groups | .371 | 1 | .371 | .389 | .535 |
| | Within Groups | 85.933 | 90 | .955 | | |
| | Total | 86.304 | 91 | | | |
| Q30 | Between Groups | .906 | 1 | .906 | .993 | .322 |
| | Within Groups | 82.083 | 90 | .912 | | |
| | Total | 82.989 | 91 | | | |
| Q31 | Between Groups | .294 | 1 | .294 | .521 | .472 |
| | Within Groups | 50.869 | 90 | .565 | | |
| | Total | 51.163 | 91 | | | |
| Q32 | Between Groups | 3.515 | 1 | 3.515 | 4.588 | .035 |
| | Within Groups | 68.952 | 90 | .766 | | |
| | Total | 72.467 | 91 | | | |
| Q33 | Between Groups | .817 | 1 | .817 | .863 | .356 |
| | Within Groups | 85.302 | 90 | .948 | | |
| | Total | 86.120 | 91 | | | |
| Q34 | Between Groups | .961 | 1 | .961 | 1.198 | .277 |
| | Within Groups | 72.202 | 90 | .802 | | |
| | Total | 73.163 | 91 | | | |
| Q35 | Between Groups | 2.319E-02 | 1 | 2.319E-02 | .048 | .828 |
| | Within Groups | 43.933 | 90 | .488 | | |
| | Total | 43.957 | 91 | | | |
| Q36 | Between Groups | 1.037 | 1 | 1.037 | .927 | .338 |
| | Within Groups | 100.702 | 90 | 1.119 | | |
| | Total | 101.739 | 91 | | | |
| Q37 | Between Groups | 2.806 | 1 | 2.806 | 3.889 | .052 |
| | Within Groups | 64.933 | 90 | .721 | | |
| | Total | 67.739 | 91 | | | |

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